THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

Rocky Mountain Oil & Gas Association, Rainbow Hotel, Great Falls, Mont., Dec. 12, 13.

Tennessee Oil Men's Association, Farragut Hotel, Knoxville, Tenn., Dec. 15, 16.

Minnesota Division, Northwest Petroleum Association, Radisson Hotel, Minneapolis, Jan. 14, 15.

North Dakota Division, Northwest Petroleum Association, Dacotah Hotel, Grand Forks, N. D., Jan. 29, 30.

Ohio Petroleum Marketers Association, Neil House, Columbus, O., Feb. 24, 25, 26.

American Association of Petroleum Geologists, Gunter Hotel, San Antonio, Texas, March 19, 20 and 21, 1931.

NATIONAL PETROLEUM NEWS

Vol. 22 No. 50

Published by
The National Petroleum Publishing Co.
1213 W. Third St., Cleveland, O.
Tel. CHerry 7672

Branch Offices:
Tulsa, 904 World Bldg., Tel. 3-7132.
New York, 342 Madison Ave., Tel. Vanderbilt 3951.
Houston, 2420 Gulf Bldg., Tel. Fairfax 6286.
Chicago, 35 E. Wacker Drive, Tel. State 4141.

Subscription rate $3.50 per year, U. S., Mexico and Canada; $5 Foreign countries. Current copies 10 cents; for back issues more than two months old 25 cents per copy.

All contents copyrighted, 1930, Trade Mark Registered U. S. Patent Office.

Member Audit Bureau of Circulations and Associated Business Papers.

General

Leaders in Oil and Automobile Industries Protest Higher Gasoline Taxes 19
Dawn Is Near in Business Depression, Economist Tells Indiana Jobbers 23
Nebraska Jobbers Look Ahead at Annual Convention 25
California Conservation Law Upheld by State Supreme Court 29
Oil Industry's Progress Toward Stability 30
A.P.I. Report of Refinery Operations, Week Ended Dec. 6 31
Laboratory Photographs Illustrate Cause of Engine Knocks 33
Refiners Asked Not to Draw on Crude Storage During Overproduction 34
Prorating the Work to Be Done to Prevent Unemployment 35
Purchasers Plan to Serve Small Wells After Prairie Ceases Buying 36
Texas Markets Seek Market Outlet for Distress Crude 37
New Cromwell Sand Area in Oklahoma; Two Kansas Pools Extended 42
Temblor Formation Found in Deep Test in Lost Hills Field 44
Shallow Water Wells in Old River Bed Give Oklahoma City New Supply 49
High Cost of Competitive Oil Field Drilling 52
California Natural Gasoline Situation—*by R. W. Garman* 55
U. S. Crude Production by Fields, Week Ended Dec. 6 97
Federal Body Urged to Preserve Trade Practice Work 122

Merchandising

"Ask the Customer to Buy" is One Way of Selling 26
Keeping Fuel Oil Tank Trucks Moving at Minimum Cost—*by Fred E. Kunkel* 81
Sloping Lot Permits Unique Station Design 88

Engineering

Modern Theory and Practice Combined in Rebuilding Swan-Finch Plant 65
Modern Ethyl Mixing Plant 73
"Electrical Ear" Picks Up Faintest Whisper of Knock from Auto Engine 77

Markets

Chicago Market Quiet, Gasoline Quoted Lower 101
Mid-Continent, Activity Continues Light in All Districts 103
Refinery Price Tables 104, 106, 107
California, Inquiry More Active for Bulk Shipments 110
Pennsylvania, Trade Reports More Optimistic 111
Eastern, Gasoline Prices Recede 0.25 to 0.5 cent 112
Gulf, Foreign Demand Fairly Active 112
Wax, Prices Continue Downward 112
Complete Seaboard Prices 114
Tank Wagon Price Tables 116, 117
Aviation Gasoline Price Tables 117
Crude Oil Prices, All Fields 119, 121
Gulf Lubes, Demand Speeds Up 126

Departments

The Editors' Viewpoint 21
The Trend of the Times—*by David Lawrence* 32
The Mid-Continent Skyline 39
Our Industry 47
New Books 50
Visiting Around the Refineries 63
New Patents 70
New Refining Patents 72
New Equipment 74
On the Lazy Bench 87
New Stations Building 113
N.P.N. Service Record 125

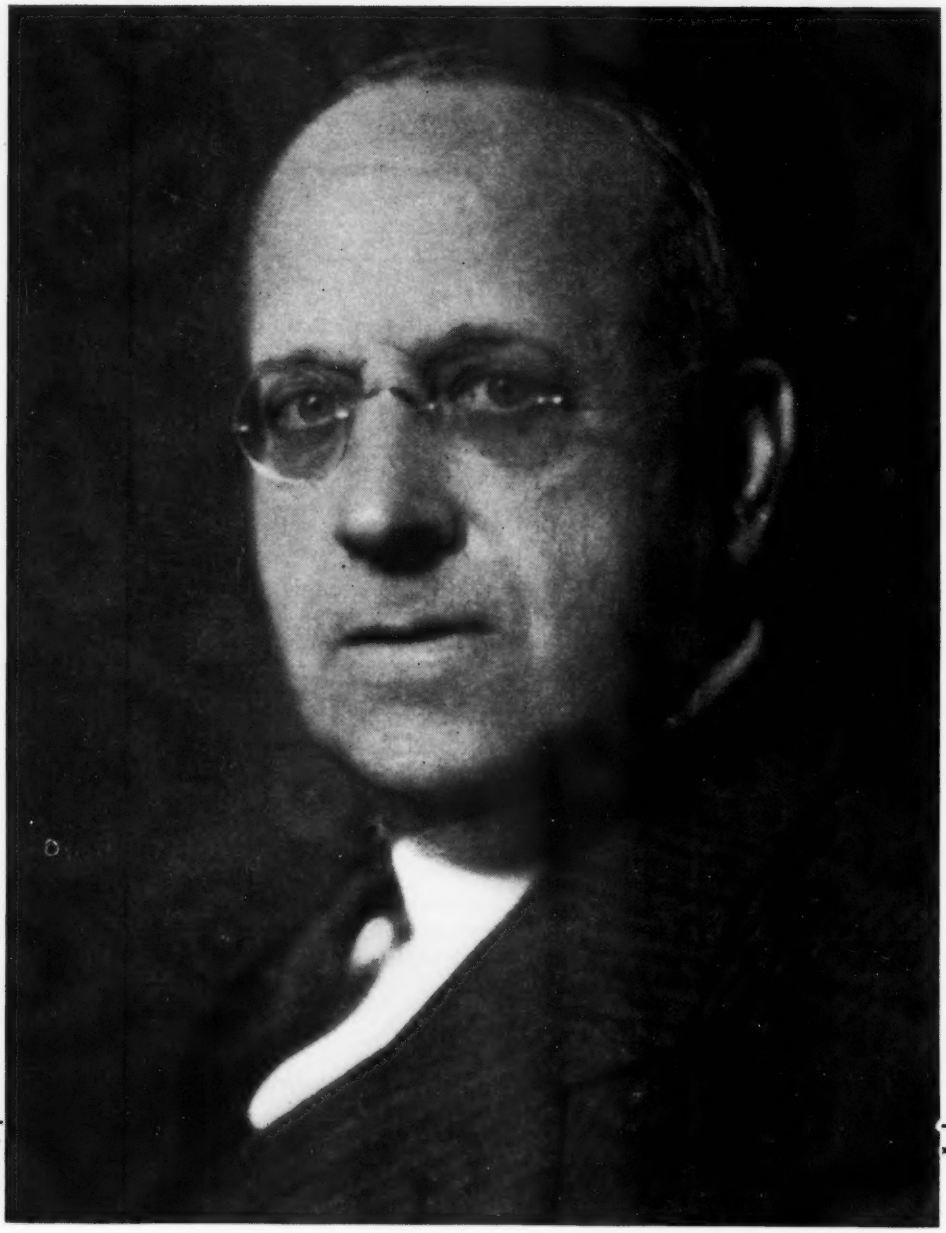


Photo by Blank-Stoller, Inc.

THOMAS J. DONOGHUE, director and vice president of The Texas Co., at Houston, has been an official of the corporation since its organization in 1902. He dates his association with Texas oil from the inception of the industry in the state, having first been identified with J. S. Cullinan in Corsicana development, which is known as the "cradle of the Texas industry," in 1901. Accompanying Mr. Cullinan to Beaumont, when Spindletop ushered in the first "gusher" production west of the Mississippi river, he was also connected with the birth of The Texas Co.

Mr. Donoghue was born in Titusville, May 13, 1869, the son of C. C. Donoghue, an early Pennsylvania refiner. After his education at Titusville and Bradford, Mr. Donoghue began his life work with the Standard Oil Co., at Bradford, at the age of 15 years. He was in the pipeline and purchasing departments until 1901, when he moved to Corsicana.

Among other organizations, Mr. Donoghue is member of the Houston Club, the Houston Country Club and the Houston Chamber of Commerce, of which last mentioned he has served as president.

NATIONAL PETROLEUM NEWS

Published at
1213 W. Third St.
Cleveland

Branch Offices
Tulsa, New York, Houston, Chicago

Vol. 22 **CLEVELAND, December 10, 1930** **No. 50**

Leaders in Oil and Automobile Industries Protest Higher Gasoline Taxes

NEW YORK, Dec. 6

THE great army of American motorists is likely to be called to arms in 1931 to ward off further increases in the state gasoline taxes.

The national American Automobile Association has issued a statement of protest from its headquarters in Washington and has appointed a committee to study the entire question of equitable taxation of car owners.

Leaders in the automobile industry and the oil industry gathered here Dec. 2 to discuss the pending proposals in several states to increase the amount of the gasoline tax.

They expressed the belief that, in several states, the taxes on motorists, principal of which is the gasoline tax, have reached the point where they are a deterrent on the increased use of cars.

They condemned the increasing tendency to use the funds collected from motorists through the gasoline tax and other forms of taxation for general state purposes, and demanded that all special auto taxes be used exclusively for highway purposes.

The national automobile association sees a possibility, during 1931, that pleas will be made in many state legislatures to use funds collected under the gasoline tax for state building programs, other than highway construction and improvement, as a means of relief from unemployment. Such proposals may meet with public favor this winter, the association believes, and thus a precedent may be established for the wider distribution of funds collected in taxes from motorists, which it will be hard in the future to get away from.

Newspaper editorial comment, collected at the offices of the American Petroleum Institute, indicates that public disfavor toward increases in the amount of the state gasoline taxes is gaining, and that the stand of the national automobile association is likely to be strongly backed up by the thousands of local automobile clubs of the A. A. A. over the country.

Increases in the rate of gasoline tax are being proposed, in spite of the fact the total revenue collected in the states under the tax in 1930 will run close to $515,000,000, a gain of nearly 15 per cent from revenue of $431,000,000 collected in 1929.

The U. S. Bureau of Public Roads places income for the first six months of 1930 at $230,600,455, as compared with $175,054,894 the first half of 1929. The bureau places the cost of collecting the tax, the great majority of which is borne by the oil companies, at $995,000 the first half of 1930. Expenditures for state road construction and maintenance for the same period totaled $157,000,000 and for county roads $45,000,000. Some $13,000,000 of tax revenue was diverted to miscellaneous purposes of various kinds.

Higher gasoline taxes will be sought in from 10 to 12 states next year, the American Petroleum Institute estimates.

"Approval of increased rates at November referendums in New Jersey and Louisiana apparently has inspired supporters of higher taxes," an institute report recently stated. "Increases will probably be sought in District of Columbia, Minnesota, Iowa, Pennsylvania, Wisconsin, Nebraska, Massachusetts, North Carolina, New York, Michigan, West Virginia, Washington, Colorado, Mississippi, South Dakota and Ohio."

With the latest changes in gasoline tax rates becoming effective in Louisiana Nov. 27, and in New Jersey Dec. 1, the amounts of the tax by states will be: three states, six-cent tax; ten states, five-cents; 17

states, four cents; one state, three and a half cents; 11 states, three cents, six states, and district of Columbia, two cents.

The protest of the automobile association was endorsed by leaders in the oil and automobile industries meeting at the Metropolitan Club here Dec. 2. Demands were also made that all special auto taxes be used exclusively for highway purposes. Roy D. Chapin, chairman of the Hudson Motor Car Co., chairman of the meeting, said that, in the past ten years, motor vehicle levies have been increased more than 500 per cent, while there has been an increase of about 160 per cent in motor vehicle registration and about the same amount in highway expenditure.

"Of late," he continued, "there have been too many demands to increase these taxes and too many attempts to divert the funds to other purposes. In some states, the motor funds are used, or planned to be used, for such things as public buildings, local schools, city streets, port expenses, sea wall and flood damage.

"Diversion to other uses of money paid as motor taxes is particularly unjustifiable. * * *

"This year, motorists will pay special taxes in excess of $1,000,000,000, while the highway program cost will be approximately $1,500,000,000, showing that while every one benefits from highway construction, one class of people, motor vehicle owners, pay two-thirds of the cost in special taxes aside from their participation in the balance."

Institute headquarters here recently issued the following statement regarding the tendency to divert revenue from the gasoline taxes to other purposes than highway improvement:

"Mobile, Ala., is considering the imposition of a city tax of 1 cent per gallon to finance a civic auditorium, and this tendency to divert gasoline tax income from its original purpose of highway construction and maintenance appears to be spreading.

"Suggestion has been made in California that a portion of the revenues from the 3 cent gasoline tax, said by state officials to be quite sufficient to carry out the highway program, be diverted to the general fund for meeting various state government expenses.

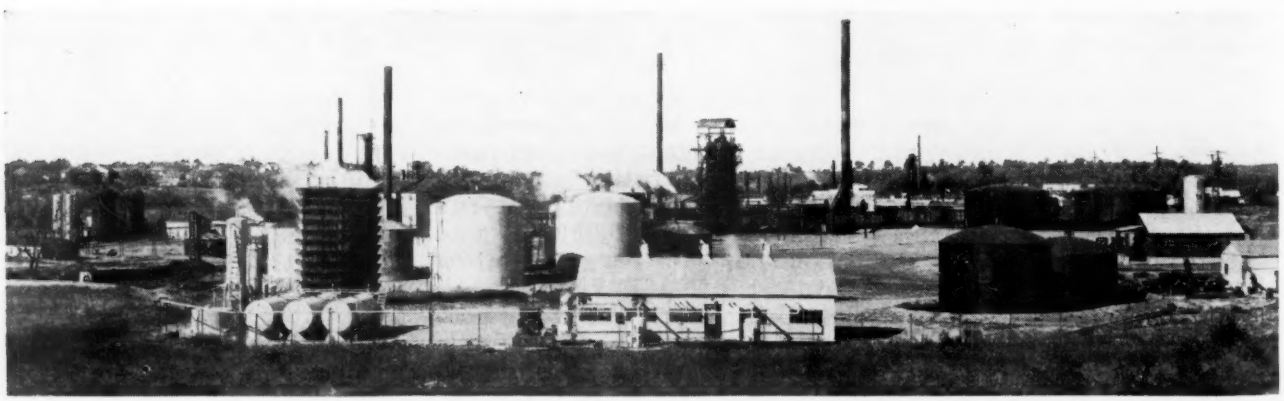
"The voters of New Jersey, in approving the increase to 3 cents from 2 cents, approved also a $100,000,000 bond issue. The gasoline tax will meet amortization and interest payments, but of the $100,000,000, some $10,000,000 will be spent on state buildings and $7,000,000 will be used to buy water sheds. The state already is spending $90,000 a year of gasoline tax revenues on the State Department of Commerce and Navigation.

"In Louisiana, where the state tax was increased to 5 cents from 4 cents, and the New Orleans city tax on gasoline automatically was lifted to 6 cents from 5 cents, the income will be used for public schools, port expenses at New Orleans and Lake Charles and for roads.

"Another form of legislation affecting gasoline tax laws which will be sought will be designed to bring about such changes in methods of allocating revenue that counties, cities and towns will receive a larger share. Particularly in Illinois and Ohio is it expected the legislature will be urged to pay more attention to the street and road financing needs of municipalities, but the agitation is general. Representatives of local units in Ohio are protesting the distribution is unfair, pointing out that the state receives 62 per cent of the revenue to spend on 13 per cent of the high total highway mileage of the state, while the counties and townships, responsible for 87 per cent of the mileage, receive only 20 per cent.

"Cities in many states believe they should have a share, or a larger share, of the gasoline tax money because their streets, at least the main streets, are connecting links in the state highway system, and also because city residents pay a major portion of the taxes."

The oil group was represented at the meeting at the Metropolitan Club here Dec. 2 by Walter C. Teagle, president, Standard Oil Company of New Jersey; R. C. Holmes, president The Texas Co.; H. F. Sinclair, president, Sinclair Consolidated Oil Corp.; Axtell J. Byles, president, Tide Water Associated Oil Co.; W. M. Irish, president, Atlantic Refining Co.; J. C. Van Eck, president Shell Union Oil Corp.; Henry L. Doherty, president Henry L. Doherty & Co.; J. Howard Pew, president, Sun Oil Co.; William R. Boyd Jr., executive vice president, American Petroleum Institute.



Refinery of the Wilcox Oil & Gas Co. at Bristow, Okla., with natural gasoline plant in foreground. Plant recently was equipped with a Dubbs cracking unit

The Editors' Viewpoint

You Cannot Be a Bear on the Oil Industry

EVERY oil man owes it to himself, to his company, and to his industry, to stop his loose thinking—and his loose talking—about the oil industry today.

The thinking of too many oil men is based on the present market for oil securities and on stuff coming from brokerage offices, and has a point of view that is not at all warranted by actual operating conditions in the industry. For too many men, their mood for the day depends on the newspaper headings on the financial page.

Stocks at noon are an eighth or a quarter off, or up, as the case may be, and the oil man who has glanced at the board, or seen the early afternoon edition of the newspaper, gives that as much weight as some fact that has to do directly with the affairs of his own company.

Why let the actions of a little group, relatively, of professional traders on the floor of the New York exchanges dictate the state of mind of a business executive towards his own industry? Why, when he is best fitted to determine for himself, from facts to which he has ready access, the condition of his own industry.

That same group of traders swept business leaders off their feet with the upward rush of the stock markets, which carried securities' prices to limits utterly unwarranted by earning power of their companies. Must we now be carried through the natural and logical backswing, and still not learn that a stock broker's office does not catch the true pulse of an industry.

If the present mental attitude of many men in the oil industry reflects the tone of the securities markets, how much more does this same point of view obtain with the investor in oil securities outside any direct contact with the oil industry.

Let a man in the oil industry drop a gloomy word or so in public, or state a set of facts or statistics without giving the proper background to show their true relation to conditions in the oil business, and that oil man has little idea how his statement is magnified and spread, through the public's present state of mind, until the public has a totally false picture of conditions in the industry.

For example, the public now looks upon the oil industry as struggling with a tremendous overproduction of crude oil and gasoline which threaten the stability of the entire industry. It is the exception to find a man of the general public who understands and appreciates that this is no new problem to the industry. The public apparently has no knowledge that the oil producing industry tackled the problem of overproduction of crude oil some two or three years ago, and even earlier in some fields. The public does not appreciate the extent to which the producing branch of the industry has licked this particular problem.

The public has not been told how the curve showing total new supply of crude has been brought down week by week for over a year until now new supply and demand are practically in balance, and the industry faces 1931 with brighter prospects than for several years past. The public does not know, likewise, how the state authorities have backed up the oil producers in Texas, Oklahoma and California, in their own efforts to hold production to current demand.

The public has the idea, in connection with the crude proration programs, that great hardships have been worked on producing companies, through less drilling and less general activity in producing fields. It is true the activities of some companies in flush fields has been sharply curtailed. In many cases these have been promotion companies and some of these have "hol-

THE red columns in the chart on the cover of this issue, relating to the state of general business, are taken from the message to congress of President Hoover, comparing current indexes of business volume with a comparable three months in 1928:

	Per Cent of 1928
Value, department stores sales	93
Volume, manufacturing production	80
Volume, mineral production	90
Volume, factory employment	84
Total bank deposits	105
Wholesale prices, all commodities	83

THE green columns on the cover of this issue compare various phases of oil industry operations for ten months of this year with ten months of 1928, the same year to which President Hoover's comparisons of the state of 1930 general business apply.

	Per Cent of 1928
Volume, gasoline demand	122.67
Volume, kerosine demand	89.27
Volume, lubricating oil demand	93.44
Volume, crude charged to stills	103.82
*Wholesale price of gasoline	83.3
Number producing oil wells completed	101.02
Volume crude oil produced	102.2

*Chicago resale market

lered" publicly. Their financial setup is such they have to keep going at almost any price for oil. Established producing companies have sacrificed under proration; but they have been better off than with unrestrained drilling. For another thing, the public is inclined to look upon the Federal Oil Conservation Board's suggestions to the refining industry to avoid further additions to gasoline stocks as evidence of a critical situation in that branch of the industry. Again, this situation is nothing new for refiners to contend with. Similar suggestions were made by the government last spring and were helpful to the extent they were followed by the individual companies.

The Mid-Continent refiners, for several years, have carried on an educational program, placing late information on production and stocks of gasoline before the individual refiners in order that they might govern their own individual plant operations in the light of these statistics.

The Mid-Continent refiners helped themselves by their educational program, and the fact the refining industry of the entire country is now alive to the importance of doing the same thing for all refining districts is the best possible sign of increased stability in this branch of the industry in 1931.

Study the chart on the cover of this issue, and the detailed figures on page 21, and see how much better off, in its current volume of operations, the oil industry is than business in general. See what a volume of gasoline and motor oil sales is indicated for 1931 if only the most conservative estimates of increases over the 1930 volume actually materialize.

Try to vizualize the amount of supplies and materials of all kinds the oil industry, with an investment of over eleven billions of dollars, is going to buy in 1931 if it does no more than keep going at its current rate of operations.

If you will sit down and study facts and figures of the oil industry today, instead of taking ticker dope, you simply cannot remain a bear on the oil industry of 1931 and farther into the future.

Tell the facts to the public, as you discuss the oil industry with your friends, and the effect will be noticeable in the public's point of view and the oil industry, and your own affairs, will thereby be helped.

A.P.I. to Discuss Code Proposals Jan. 8

NEW YORK, Dec. 6.—Directors of the American Petroleum Institute will meet Jan. 8 in New York to consider the three proposals to modify interpretations to the code of marketing practices submitted to them by the marketing division of the institute in Chicago last month, and the question of gasoline tax evasions and tax racketeering.

The code proposals were drafted with the intention of remedying abuses which have developed under lease and agency control of marketing outlets and under commercial discounts at service stations.

One proposal is that the minimum term of a lease be set at three years. Another is that Rules 1 and 10 be applied to lease and agency outlets. These rules limit the equipment and improvements which may be put in at a dealer's service station.

The third proposal would require the posting of commercial discount prices at service stations. Such prices at present are exempted from posting under Rule 17 of the code.

It was pointed out by a member of the national committee on interpretation here this week that the code organization is limited in the breadth of the interpretations it may adopt and is powerless to change the code without going to the Federal Trade Commission. Were the commission to alter the code it would automatically release more than 16,000 signatories to the present code.

The institute has sent state gasoline tax collectors letters asking them how serious they have found tax evasions and whether there has been evidence of racketeering. Cases of racketeering have been reported around Chicago and in northwestern Indiana in territory contiguous to Chicago metropolitan area.

State to Act Against Proration Violators

TULSA, Dec. 9.—The state of Oklahoma today was preparing through the attorney general to ask for receivers for Marco Oil & Royalty Co., and the Century Petroleum Co., two small operators in the Oklahoma City pool, in order to force their compliance with proration. After serving notice Saturday that they were going to violate the corporation commission's order which penalizes new wells 65 days in the pool, the two companies opened their wells to production on Monday.

The attack on proration in Oklahoma City has warmed up again and is soon to have full hearing in federal court. The case of the Champlin Refining Co., will come up in federal court in Oklahoma City on Dec. 17. The company was denied injunction against the commission several weeks ago.

Gas Pipeline Bill Before Congress

WASHINGTON, Dec. 9.—Senator Capper of Kansas, at the request of the Kansas public utility commission, has introduced a bill to bring "gas pipeline agencies," their rates, charges, services, practices, rules and regulations under the complete jurisdiction of a Federal Gas Pipeline Commission, to sit in Washington, each member to have a term of six years and a salary of $10,000 a year. The commission is to proceed under the rules and practices established by the Interstate Commerce Commission.

The title to the bill shows that it is to have control of the distribution of gas, natural and artificial in interstate commerce. The grant of power to the proposed body, however, is in language not limited to interstate commerce.

Dawn Is Near in Business Depression, Economist Tells Indiana Jobbers

Staff Special

INDIANAPOLIS, Dec. 5

BUSINESS is at or near the bottom of the current depression and definite signs of improvement should be evident by the second quarter of 1931 with third quarter business at a level considerably higher than the third quarter of 1930, Paul J. Stokes told the Indiana Petroleum Association at its annual convention here Dec. 4 and 5. Mr. Stokes is research engineer of the National Retail Hardware Association and formerly was associated with the Babson organization.

L. S. Wescoat, vice-president, Pure Oil Co., Chicago, expressed belief our industry was on the way out of its present troubles because crude oil production was being stabilized, refinery operations were being limited to market demand, and the marketing structure was being reestablished on a business-like basis.

An optimistic note about the future of our industry and the Independent marketer was struck by Herbert F. Davis, president of the association. Mr. Davis said there are 35 more carload buyers of gasoline in Indiana now than at the beginning of this year. He also told of the growth of the Indiana association from nine active members last January to 150 at present. He announced that in recent weeks, Max L. Wickersham, executive secretary, had obtained 75 new members by employing a field man to solicit the oil men of Indiana personally.

Roger B. Stafford, NATIONAL PETROLEUM NEWS, Cleveland, gave a few high points on merchandising, including customer contacts and the qualities that induce customers to buy gasoline and motor oils as revealed in a recent survey of thousands of car owners for Shell Eastern Petroleum Products, Inc. He also predicted a larger gasoline market for 1931 but with a smaller increase over 1930 gallonage than the gains in each of the last 10 years had been over gallonage in the next preceding years.

The association drafted a campaign to get a lower rate for the inspection of gasoline and kerosine from the 1931 legislature. Each Indiana state senator and representative will be solicited by an oil man to support a new inspection bill calling for a fee of 1½ cents a barrel to replace the present fee of 4 cents a barrel. The reduction is expected to save the Indiana oil men about $250,000 a year.

Mr. Davis was re-elected president. Other officers elected are: W. F. Small, Arrow Oil Co., Peru, vice-president; H. R. Orbaugh, Cities Service Oil Co., Elmwood, treasurer, and Max L. Wickersham, executive secretary. Directors, all re-elected, are: H. H. Johnson, Supreme Oil & Refining Co., Indianapolis; Paul Deer, G. W. Deer & Son Co., Crawfordsville; E. C. Storm, Tri-Point Oil Co., Madison; Elza J. Warren, Warren Oil Co., Lafayette, and Paul W. Durham, Shell-American Oil Co., Kokomo.

REASONS given by Mr. Stokes for his assertion that we are now at or near the bottom of the depression is that for several months consumption of finished products has been larger than production. Buying has been closer so people will shortly be forced to buy the things they need.

He said that the income of 40 per cent of wage earners is the same in a depression year as in a prosperous year, that the income of the American people this year was $70,000,000,000 which "can be the backbone for a whale of a lot of business." For last year the total income has been estimated at $90,000,000,000, so this year's income is only 22 per cent than that of the boom years. But this year's income is not being spent freely, he explained, because people are fearful of hard times which they themselves are helping to prolong.

Although there is much unemployment at present, he said, more than usual part time work, and 20 per cent of industry has cut wages, we have been storing capital. As soon as we get confidence that business can be good, we will witness the release of the present dammed up capital and recovery will be underway.

THE length of this decline in business has equalled the longest decline of any depression in the last 30 years, he asserted. The last previous long decline was that of 1921. Because business has been below what economists call normal we cannot help but be headed for improvement, he argued.

Factors which may tend to hold back quick recovery, he said, are the amount of unemployment, the reduced purchasing power of workers who have been working part time, reduced agricultural income because of drouth and low prices for farm products, and the foreign situation which was aggravated by the Grundy tariff.

He predicted that general business the first quarter of 1931 would be below that of the first quarter of 1930; that business will reach the 1930 level in May or June and that third and fourth quarter business would be above the 1930 level, perhaps 15 to 20 per cent above.

He warned the Indiana marketers that real improvement would not show up before possibly March. Commodity prices should become stabilized in the next three months, he said, and in a year will be higher than present commodity prices but not much higher than present

prices because we are in a major downward trend.

Interest rates will be low the first two quarters and higher after that, he said. Bonds will be strong the first half year. He predicted that the average prices of industrial common stocks will rise about 40 per cent during the year but said he could not say which stocks would rise.

"How will all this affect your business?" Mr. Stokes asked and answered himself by saying the background would be laid for increased consumption of refined petroleum products. He said he could not make a true prediction of what probably would happen in the petroleum industry because he said he knew of no other major industry that was "so utterly lacking in reasonable business-like control."

He said automobile production would be about 20 per cent larger than it was this year but not so large as in 1929.

"There is a childhood story which recounts how the good people of Topsy Turvy Land tried always to give away their money, never to accumulate it," Mr. Wescoat introduced his discussion of "Why Not Profit in the Oil Industry."

"I cannot vouch for the truth of this," he continued, "but it would seem that here were laid the foundations for many of the business practices of the oil business. At any rate, this seems to be a plausible excuse for the fact that the oil man today insists on producing more than he knows he can sell, insists on selling for less than a fair price, insists on buying business when he knows he can sell it, and insists on taking a loss when he knows he should be getting a profit. . . .

"THE oil business looks like an ideal set-up for profit. Its chief products are indispensible. The market is large. There is plenty of capital, initiative, advertising, service, supply, demand—all the factors that make for prosperity. But when you analyze the situation that which looks like an ideal business set-up, you find that it is considerably scrambled and you learn that most of the oil man's profits are going to pay for the omelet. I'm not saying that it is the oil man's fault. I'm blaming no one. I simply say that the oil business, built in haste, is paying too costly a price for repenting at leisure.

"The one happy, wholesome, gratifying factor in the whole situation is that at last we seem to be coming to a realization of the position we are in and are trying to correct it. There is evidence of our realization in the efforts to stabilize production, to limit our refinery operations to market demand, to re-establish our marketing structure on a business-like basis. And the fact that so many of us are bumping our heads against the unyielding wall of economics is certain evidence our efforts have been made none too soon."

MR. WESCOAT then quoted from the address of E. B. Reeser at the American Petroleum Institute meeting in Chicago last month that our industry was sound but that the men of the industry must face the facts and use common sense.

He gave these three fundamentals of successful marketing:

"1. Salesmanship—Not the high pressure, one-time method, but an honest recital of the particular merits of the salesman's products, whether the sale is one gallon or a million.

"2. Service—Today our marketing outlets dispense a great deal more than the commodity they advertise for sale. Courtesy costs nothing and is probably our most valuable sales assistant. Our customers expect to have water placed in their radiators, air in their tires, and probably the windshield wiped off. Attention paid to such details will pay large dividends in goodwill and steady patronage.

"3. Quality—As automobile engine design has changed during recent years it has been necessary that we completely revise our standards by which we judge petroleum values. Gasoline which was considered an excellent product a few years ago would prove difficult to sell in the present highly competitive market. Our customers have largely been educated to the difference in gasoline and oil and today demand products which will give them satisfaction in their particular type of car."

Mr. Wescoat then said the code of marketing practices was designed to inject some degree of order into marketing if we were to avoid complete chaos. He added that if ever there was a time for all good marketers to come to the aid of their industry, it is now. He concluded:

"An advertising pamphlet came to my desk a few days ago. My attention was attracted by its title, 'When Does a Dog Stop Running Into the Woods.' The answer was, 'When he is half way in,' because at that point he starts running out. I think the oil industry is on the way out, but the time of our arrival is dependent on every unit in every branch of the industry adapting its operations to the requirements of present day economic conditions."

Mr. Stafford after reviewing the growth in the market for gasoline and motor oils since the end of the World War and the increased competition that has resulted from the overproduction of refined products, said it looked as if only smart merchandising would make marketing profitable in the future.

FACTORS that will affect marketing conditions and profits, he said, are the increasing number of marketing outlets, the slower rate of development of new markets because relatively fewer new car registrations are developing, the one-stop stations of oil and tire companies with their diversity of merchandise and services, and the low-price stations which will continue as long as the supply of gasoline and oil is as plentiful as it is today.

"In merchandising your goods," he said, "sell the customer the idea back of the goods rather than the goods. If your salesman can convince him why he should use your gasoline, your motor oil, or should buy something else you are handling, he will buy more quickly than if you try to high pressure him. Most people like to exercise their own judgment so the job of your men is to convince them that it is to their advantage to use what you have to

offer and let them think they are deciding for themselves. That is real salesmanship.

"In your lubrication stations have your men show your customers your lubrication charts, kept up to date as new car models reach the market. Tell your customers the number of lubricants you use and why you use each lubricant where you use it.

"All of the more than 400 Firestone Tire one-stop service stations and many of the new oil company super-service stations have boards with grease guns for points that take something else besides high pressure lubricants. That is a good merchandising stunt. It also will be to your advantage to arrange a display of the various lubricants you use so your customer can see what he is getting.

"In placing displays put them where they can be seen—not in some out of the way corner or high above the level of the eye. Customers are wont to look straight ahead and not up.

"Let your advertising be aggressive. Dramatize your story. It might be well before you decide on an advertising compaign to read the biography of P. T. Barnum. Get showmanship—attention getting but not ridiculous—into your merchandising efforts."

Mr. Stafford concluded with a summary of the results of a survey of the qualities that induce motorists to buy various gasolines and motor oils. This survey was made by an advertising agency for Shell Eastern. Details will be published in subsequent issues of NATIONAL PETROLEUM NEWS.

Entertainment at two luncheons of the association was supplied by equipment and supply companies which are associate members of the association. Suppliers closed their rooms during the sessions of the convention so as to insure the largest possible attendance. Why this effort was made was explained to the association by Lieut. Com. A. W. Schrader, U.S.N., retired, who is now with the American Oil & Grease Corp. The suppliers' entertainment committee included Lieut. Com. Schrader; C. A. Beach, Empire Oil & Refining Co., and T. B. Hancock, Emerson-Scheuring Tank Co.

Nebraska Jobbers Look Ahead At Annual Convention

OMAHA, Dec. 5

WITH Charles W. Bryan back as governor oil jobbers in Nebraska are looking to his office for developments at the coming session of the legislature it was brought out in the legislative report at the tenth annual convention of the Nebraska Independent Oil Men's Association here Dec. 2, 3, and 4. Mr. Bryan is remembered by industry for his activities in marketing while governor during previous terms, especially his state operation of gasoline and coal businesses.

Any increase in the state gasoline tax was frowned upon in a resolution placing the association on record as favoring the present tax law. More vigilance in collecting the tax along the state's borders was urged in another resolution.

The formal portion of the convention was a "What's Ahead" program. At the first meeting Dec. 2 Roy Cochran, state engineer, opened the speeches with "What's Ahead for Nebraska Highway Developments?" Later the association adopted a resolution commending Mr. Cochran's administration and advising that he be continued in charge of road building by the incoming adminstration.

"What's Ahead From the Refiner's Standpoint?" was the subject for Glenn Condon, director of public relations, Skelly Oil Co.

"In a great many cases it has been conclusively shown that it is better for a refiner to market his products through a progressive and resourceful jobber than to establish marketing outlets of his own," said Mr. Condon. "The jobber who will take advantage of all good marketing practices can and will continue in the future as a most successful merchant, and instead of being cut off from a source of supply he will find that the refiners will be vieing with each other for the privilege of supplying his requirements."

H. N. Blakeslee, petroleum representative on the National Safety Council, exhibited motion pictures of safety at service stations.

Speakers on the morning program for Dec. 3 were E. M. Toby, Kanotex Refining Co., "Some Petroleum By-Product Profits"; Ken Cloud, Irving-Cloud Publishing Co., "What's Ahead in Service Station Operation"; Chas. D. Parr, Gray Co., "What's Ahead for the Lubricating Business"; and Ralph R. Matthews, Battenfeld Grease & Oil Corp., "A Reel on Grease."

At the afternoon session James A. Emery, general counsel National Manufacturer's Association, spoke on "The Trade Associations and the Anti-Trust Laws." He pointed out that trade associations no longer are questioned as to their legality, but that they are considered instruments through which self government is made more effective.

He commended the code of ethics as a forward step for the industry to control itself. R. H. Thomas, Mid-Continent Petroleum Corp., spoke at the meeting also on "What's Ahead for Petroleum Marketing."

The meeting Dec. 4 was on legislative and association business, and committee reports. Resolutions were adopted to employ a field man to obtain more members, and a special legislative committee was recommended.

New officers are Claude C. Rosenberg, Lexington, president, succeeding S. A. Wassum, Tekamah, who withdrew his name for a fourth term. O. J. Shaw, Lincoln, became first vice-president, succeeding Mr. Rosenberg. R. A. Ogier, North Platte, was elected second vice-president, succeeding Mr. Shaw. New directors for the three year term are Mr. Wassum, and J. H. McCulloch, Hastings.

«Ask the Customers to Buy» Is One Way of Selling

By E. L. Barringer

N. P. N. STAFF WRITER

LOCAL price war in Kalamazoo, Mich., is being used by the L. V. White Co. as a sales opportunity. Mr. White believes his customers appreciate quality in gasoline, so he used the price war as a sales argument. His station men give the following sales speech on gasoline:

You want the Dixie NevrNox Ethyl don't you? If you haven't given our Ethyl a good trial, now is an excellent time to try it. We can now sell you five gallons of Ethyl for the former price of regular."

When the price war is over he believes these new Ethyl customers will stay with the brand, and a temporarily bad situation is turned into an opportunity to build sales.

KALAMAZOO, Mich.

SALESMANSHIP at the gasoline pump combined with salesmanship on the street has resulted in service stations of the L. V. White Co., in Kalamazoo, Mich., having a ratio of one quart of oil to six gallons of gasoline. Over half the gasoline sales are premium grade.

This record was made, and is being improved, by the company's policy that it considers itself a merchandising organization rather than an oil jobber. The L. V. White Co. has 12 service stations in Kalamazoo, adequately manned with attendants. To the public this equipment may be filling stations, but to the company these buildings are regarded as retail stores. Attendants are considered salesmen.

To sell this merchandise at these stores the company's policy recognizes two efforts. Each is distinct. There is the sales effort before the customer drives into a store and the sales effort after he drives into a store.

In the outside merchandising effort the chief salesman is a woman who has spent from seven to eight years canvassing in Kalamazoo. Her work is to go from door to door, asking motorists to buy from the L. V. White Co.'s gasoline and oil stores.

As will be explained in a later article, this solicitor canvasses the marketing territory of each new store prior to its opening. From this canvass is obtained a card file showing the name, address, telephone number, and preference for gasoline and service stations, for each motorist in the territory.

H. H. Sharpsteen
Director of sales, L. V. White Co., Kalamazoo, Mich.

At the main office these cards are filed by stores. When the cash is turned in at headquarters daily the operator returns to his station store with a list of possible customers to be called on the telephone and asked for their patronage. There may be only a few names on the report, or there may be many, depending upon conditions. Opposite each name is space for the operator's remarks on the results of the call.

After the initial canvass, prior to the opening of the station, the territory is not allowed to go to seed. If sales begin to fall at any store the canvasser returns to the territory at once, and makes another thorough canvass. It will be noted that this canvasser is experienced, that she was selected for the position on her ability to canvass, and that every store has a definite marketing territory.

A wall map of the city of Kalamazoo hangs in the office of Mr. White. Every store of the company is indicated by a pin. Around each pin is an area, colored solidly, indicating the section of the city comprising that store's natural marketing territory. Note again that competing oil company stations are not considered; theoretically they do not exist as far as this map is concerned and every section of the city is apportioned to one of the L. V. White stores.

Salesmanship at the gasoline pump begins as soon as the customer has stopped his auto in the store. The thought is literally ground into the operators that they are salesmen; that they are not employed to

fill the wants of the customer; that they are to sell gasoline, motor oil, and lubrication; and that as salesmen they are to *ask the customer to buy.*

"If merchandising is merely giving the customer what he wants we might just as well employ boys," said H. H. Sharpsteen, director of sales. "We could employ boys 15 years old to turn a gasoline pump, ask 'How's your oil?' wipe windshields and inflate tires.

"It happens the L. V. White Co. is in the oil business, but the fact that these salesmen have gasoline and oil to sell is beside the point. They are to sell. I want to train them to sell anything. If we threw out gasoline and took on automobiles I believe these men could carry on just as well. Regardless of what we are selling a salesman must have the crust to ask a prospect to buy."

An experience several years ago brought this point home to Mr. Sharpsteen. He was operating a big used-car sales lot in Kalamazoo for auto dealers. One of his salesman lacked all appearances and attributes of a salesman. Apparently he was not destined to shine as a salesman, but he proved to be one of the best men on the lot.

Mr. Sharpsteen observed his methods. A negative reply or indifferent attitude did not stop the salesman. If the prospect said "No," he made another sales point, then asked him to buy. He repeatedly asked the prospect, "Will you buy?" and continued to use those three words more often than any others as long as the man was a prospect. The man was a success.

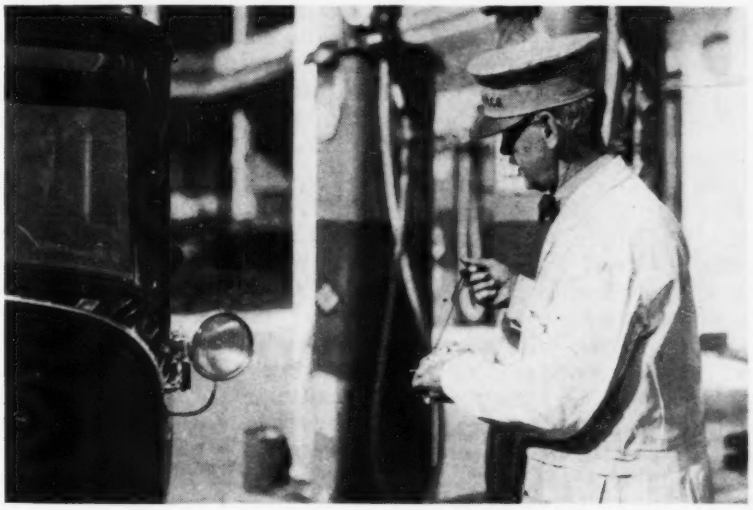
At the L. V. White stores the same rule is followed. Obviously the customer came in for some merchandise, but the salesman is to ask him to buy before the customer asks for gasoline or oil. The salesman is to lead, to jump the gun on the conversation, and ask the customer to buy.

The initial advantage is with the salesman; first impressions are to be favorable, then into selling. As the customer pulls up at the gasoline pump the salesman is to create that first impression. He smiles. He gives the "Dixie salute," touching the fingers of the right hand

Three Steps in the Sales Program at L. V. White Co. Stations

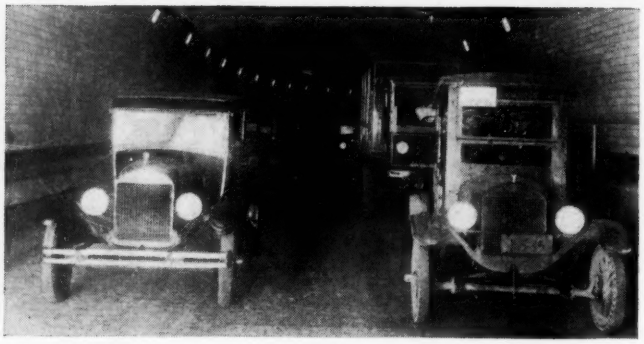
Creating a favorable first impression—the Dixie salute

"You want the Dixie NevrNox Ethyl, don't you?"



Motor oil is sold at the crankcase gauge

Modern City Handling of Traffic Affects Gasoline Distribution



Photos by Underwood & Underwood

THE opening of the Holland vehicular tunnel between Jersey City, N. J., and New York City between two and three years ago showed the change in the nature of gasoline outlets in a given territory that comes about with the adoption of new methods of handling heavy motor vehicle traffic in cities. There are separate tunnels for traffic moving each way and two lines of cars in each tunnel move under the Hudson River to the volume of many thousand vehicles a day. There is no provision for buying gasoline in the tunnels, of course, and real estate values are high around the entrances. Use of the tunnels has caused these thousands of drivers to drive over new routes in approaching and leaving the tunnels.

One view shows the New York entrance to the tunnel with toll booths in the foreground. The other is a view in the tunnel itself.

to the brim of the cap, and smiles. Then a "Good morning, sir."

The next eight words make the sale. *"You* want the Dixie NevrNox Ethyl don't you?" It is to imply that the customer wants the best gasoline, that he is a quality buyer. Just as in any other type of store, the salesman wants to sell the largest quantity of the best goods. Results are apparent, with 50.9 per cent of station gasoline sales being Ethyl. In September over 60 per cent were Ethyl, and one of the salesman, Frank Moran, at station 5, sold 1.1 gallons of Ethyl for every gallon of regular. It pays to ask.

With those eight words the salesman is in the lead. He does not wait for the customer to ask for a given brand and for so many gallons. He asks the customer to buy a specific product, and then asks him to buy all his gasoline tank will hold.

In case the customer buys less than a tank full the salesman has one more opportunity. He tells the customer the tank will take so-many more gallons. Again the salesman is asking the customer to buy.

So through the whole range of petroleum products at the stations the company has worked out a sales program.

That high ratio of oil to gasoline sales is explained by salesmanship also. The salesman knows that the only time the motorist will buy oil is when the crankcase level is low, or when he needs a complete drain. And the only way to determine whether the customer will buy oil is to check the crankcase. The only way to sell a complete drain is to ask the customer his mileage since the previous change. Every time a crankcase is drained the salesman shows the customer the gauge and tells him the oil level.

Station salesmen are selected on their qualifications to sell. The ideal man is one who has not had any previous petroleum experience, who is married, and about 25 years or older. Younger men are employed, especially during the summer, to help with the servicing, as wiping windshields and inflating tires.

The job is thoroughly explained to the men before they are employed. The company wants the men to know what their job is, and to be satisfied with the work.

The initial training periods covers six weeks' work at the station adjoining the bulk plant and main office. Then the men are transferred to other stations. Sales meetings are held every Tuesday and Thursday evening. The second floor of a station in the east end of Kalamazoo is equipped as a training room. Wall charts illustrate servicing points on new auto models. There is equipment so refinery salesmen may give illustrated lectures.

To stimulate the men there is a daily bulletin, and sales contests. These bulletins contain some timely hints on salesmanship; such as advising extra effort over holidays and special week ends, and also give the men general information, and standings in the contests.

The sales contests are on a monthly and yearly basis. There is a cup for the highest station, and a cup for the highest individual salesman. Points are awarded for increases in gasoline, oil, and grease sales.

To increase the efficiency of the station salesmen they are used as their own supervisor. Each month two men are taken off station duty, and work as supervisors. One is in charge of the night shift; the other in charge of the day force. At the end of the month they return to their stations, and another pair become supervisors.

As a result of this method every station man has the experience and is of the caliber of a supervisor. They know the organization details between stations and the office. Most important of all, they have seen the various individual sales effort at all stations, and gain a new concept for the gasoline and oil business. When they return to their stations at the end of the month they have a better understanding of the company, and prove better salesmen through new enthusiasm for their work.

California Conservation Law Upheld By State Supreme Court

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Dec. 4

THE California state supreme court in effect has declared the California gas conservation law constitutional and opened the way for its enforcement in California oil fields where gas wastage exists.

The court Dec. 3 denied a writ applied for by four independent oil companies operating in the Santa Fe Springs field to stay a preliminary injunction asked for by the state against waste of gas there. The injunction was issued in the lower court March 19.

The conservation statute, new among measures of this kind, was passed in the spring of 1929. Oil companies helped draw up the bill. It gives the state the right to prescribe the amount of gas that could be produced in individual fields, in the interests of conservation. It also gives the state's agents the right to set the ratio of gas to oil production in the oil fields, which would, in itself, mean a regulation of the production of oil. In discussing the claim the California gas act was unconstitutional, the court said, "There are many cases and great uniformity of decision to the effect that the public has a sufficient interest in the preservation of oil and gas to justify legislation to prevent waste thereof."

In commenting on the ownership of oil and gas the court said: "The generally accepted view is that property right of the owner or lessee of land in and to the gas and oil beneath the surface is not an absolute one. Such substances, because of their peculiarity in the natural state, partake more of the nature of common property, title to which becomes absolute only when they are captured and reduced to possession.

THE following definition of "waste" of natural gas was given in the ruling of the California state supreme court in the Santa Fe Springs case:

"* * * depending on a number of factors, such as location of oil reservoir, extent of oil sand, the amount of gas in solution and so on, gas that is allowed to come to the surface without its lifting power having been utilized to produce the greatest quantity of oil in proportion, may be said to have been unreasonably wasted."

"Because of their peculiar nature the public has a definite interest in their preservation from waste and destruction. This is true because of their character as natural resources and also because the public interest has attached by virtue of positive statutory law or by court judgment independent of statute."

After a discussion involving the origin of oil and its action under ground, the court remarked that the importance of gas in the oil producing industry has become a question of considerable concern to the industry itself and to the government to the end that its function may be fully utilized without waste.

Therefore, said the court, depending on a number of factors, such as location of oil reservoir, extent of oil sand, the amount of gas in solution, and so on, gas, that is allowed to come to the surface without its lifting power having been utilized to produce the greatest quantity of oil in proportion, may be said to have been unreasonably wasted.

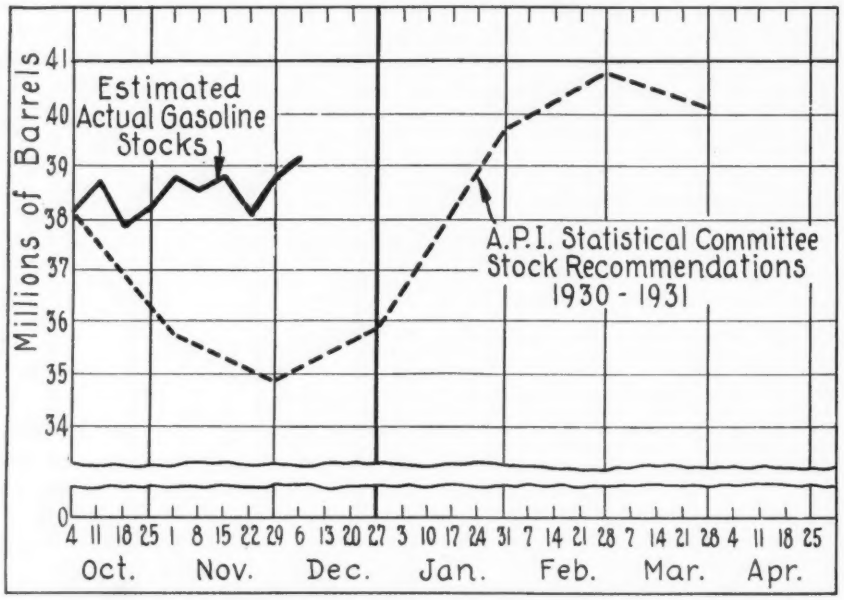
The court said that, in view of the varying conditions in respective oil reservoirs and to wells within these reservoirs, it would have been impossible for the legislature to frame a measure based on gas-oil ratios or percentages that would operate without discrimination. Further, it said that a reasonable proportion of gas to the amount of oil produced from each well or reservoir is a matter that may be ascertained to a fair degree of certainty in each individual case.

In reply to the contention that the real purpose of the statute was to curtail production of oil so as to regulate and stabilize the market price, the court said, whereas the enforcement of the law may affect the market price of oil, legislation to conserve a natural resource should not be stricken down because there may be an incidental and unavoidable interference in the economic field.

The court concluded its decision with a reference to the defendant's claim that enforcement of the statute at Santa Fe Springs would necessitate the shutting down of a particular well. While conceding this the court said that the operating company is in no position equitably to insist that the well, which is called a "waster," be operated to the detriment of other operators in the field and of the general public.

This decision by the supreme court is substantially the same as that handed down by the District Court of Appeals, Nov. 29, when it set aside the Wilshire group's petition for a writ of prohibition to prevent enforcement of the temporary injunction, issued by the Superior Court at Santa Fe Springs.

Oil Industry's Progress Toward Stability


Millions of Barrels
41
40
39
38
37
36
35
34
0
Estimated Actual Gasoline Stocks
A.P.I. Statistical Committee Stock Recommendations 1930 - 1931
4 11 18 25 1 8 15 22 29 6 13 20 27 3 10 17 24 31 7 14 21 28 7 14 21 28 4 11 18 25
Oct. Nov. Dec. Jan. Feb. Mar. Apr.

The above chart shows the present status of actual gasoline stocks at refineries in this country (solid line) as compared with the recommendations in the report of the A. P. I. committee for stocks for various periods (dotted line) to bring the industry out April 1 with total stocks of 40,000,000 barrels.

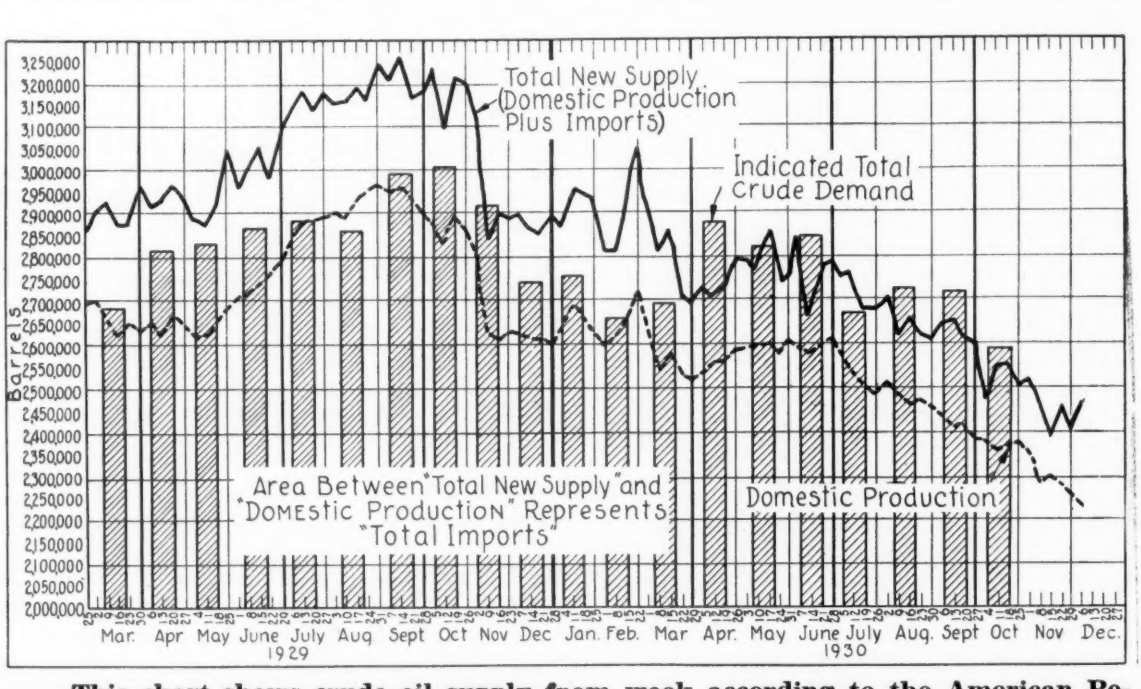
DOMESTIC production of crude oil was reduced 36,650 barrels daily average in the week ended Dec. 6 according to estimates of the American Petroleum Institute. Daily average production was down to 2,229,250 barrels.

Imports of foreign crude took a sharp jump during the week reaching 239,430 barrels per day. This was an increase of nearly 100,000 barrels daily average over the last week of November and brought foreign oil up to nearly 10 per cent of the total new supply of crude. Total new supply averaged 2,468,680 barrels per day during the week as compared with 2,407,900 barrels in the week ended Nov. 29.

The reduction in domestic production was due almost entirely to activity in Oklahoma. In that state the Oklahoma City, West Asher, Earlsboro, Konawa, Mission, St. Louis and other fields made substantial cuts in output. Total reduction in the state's output was 35,000 barrels daily average.

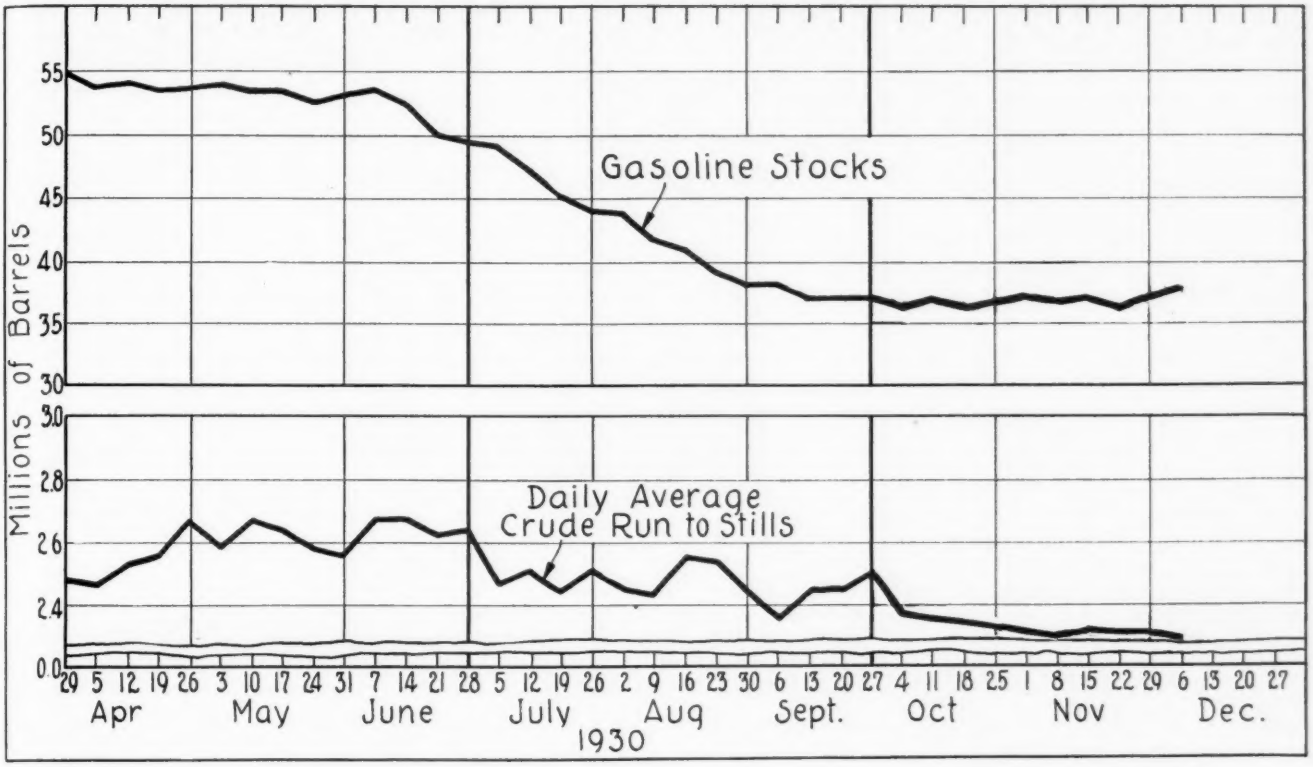
In order to keep their stocks of gasoline from increasing too rapidly during the present season of low demand refiners were forced to curtail their runs of crude to stills during the week. Refinery demand for crude oil averaged 2,187,300 barrels per day at plants with 95.7 per cent of the nation's still capacity. This was a reduction of 59,000 barrels daily average from the demand of 2,246,300 barrels per day reported by the same group of refineries in the previous week.

Estimated total U. S. stocks of gasoline on Dec. 6 stood at 39,200,000 barrels. The past two weeks have seen an increase in this figure of a little over one million barrels.



This chart shows crude oil supply from week according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Texas Gulf Coast Refiners Increase Gasoline Stocks

By Telegraph

NEW YORK, Dec. 9

STOCKS of gasoline at U. S. refineries increased 455,000 barrels in the week ended Dec. 6, according to reports gathered by the American Petroleum Institute. Total stocks at the close of the week were 37,742,000 barrels.

Except on the Gulf Coast of Texas there were no important additions to gasoline stocks during the week. The Texas Gulf group added 633,000 barrels to their storage when their crude runs were kept within 1000 barrels daily average of the previous week's runs despite an apparent drop in gasoline shipments of considerable proportions.

A reduction of 136,000 barrels in stocks of gasoline was reported by Atlantic coast refiners. Louisiana-Arkansas refiners reduced their stock 94,000 barrels and a cut of 62,000 barrels was made in the Indiana-Illinois group. California refiners drew 27,000 barrels from storage.

Crude run to stills of all reporting refiners was cut 59,000 barrels daily average to 2,187,000 barrels per day.

California refiners cut their runs 19,500 barrels daily average. Other sizable cuts were made by Inland Texas, Oklahoma, Kansas, Indiana-Illinois and East Coast refiners.

Fuel oil supply and demand were almost in balance during the week. There was a cut of only 4000 barrels in storage.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gasoline & Fuel Oil	Gas & Fuel Oil
		Dec. 6	Nov. 29	Dec. 6	Nov. 29	Dec. 6	Nov. 29	Dec. 6	Nov. 29
East Coast	100.0	446,000	453,100	72.8	74.0	5,427	5,563	10,852	11,182
Appalachian	93.8	82,600	74,300	62.3	56.1	829	778	1,035	1,025
Ind., Ill., Ky.	97.5	252,300	260,600	66.2	68.4	4,193	4,255	3,868	3,978
Okla., Kans., Mo.	89.4	237,400	250,900	57.6	60.9	2,413	2,325	4,538	4,583
Texas	91.9	463,800	478,300	62.4	64.3	6,896	6,292	10,775	11,017
La., Ark.	98.3	145,900	146,700	55.7	56.0	1,201	1,295	2,224	2,261
Rocky Mountain	93.1	39,700	43,300	28.4	31.0	1,548	1,517	1,026	1,029
California	98.8	519,600	539,100	58.5	60.7	15,235	15,262	104,546	103,793
Total	95.7	2,187,300	2,246,300	61.2	62.9	37,742	37,287	138,864	138,868
Texas (Gulf Coast)	100.0	353,300	354,300	66.7	66.9	5,663	5,030	8,101	8,290
La. (Gulf Coast)	100.0	108,700	98,300	73.7	66.6	935	1,011	1,253	1,291

THE TREND OF THE TIMES

By David Lawrence

Published in the Petroleum Industry Exclusively by NATIONAL PETROLEUM NEWS

WITH the elections over and a less partisan spirit in politics prevailing, at least for the time being, the business of the hour is organizing our recovery. As the months roll by, the fact is being borne in all too clearly that the problem is not wholly that of America. The necessity for world-wide reorganization is gradually becoming patent. Thus France and Great Britain are discussing a rearrangement of their credits with each other at the same time that the world is looking askance at a possible upset in Germany which may require further revision of reparations whilst fascist Italy and communist Russia loom up as possible brethren in an economic partnership.

The further we get from the events of 1929 and the expansion that preceded it, the more we recognize that the readjustment is of such major consequence as to be compared, perhaps, with the economic changes which followed the Napoleonic war. While the world today is geared up to a larger scale of production and deals in a volume much larger than at any time in history, the economic historian points to the middle of the nineteenth century with its record of prosperity relatively greater than that which has been witnessed in the twentieth century. In other words, the per capita gain was greater and the distribution of wealth perhaps more even. It is a curious phase of American psychology which insists upon believing that record heights have been reached only in our own generation. The American people, in the period just before the Civil War, really played a greater part in foreign trade, relatively speaking, than they do today. The clipper ship was on every sea. International trade was then a basis of American prosperity. So it is not unnatural to look forward once more to a re-birth of American foreign trade as a precursor to a stabilized economic structure at home.

We have used the terms inflation and deflation for a decade, and now the word liquidation seems to have come into its own. The puzzling obstacle is labor. Theoretically, it is counted upon to deflate, but it never does. This means the retention of standards of living for they depend on good wages.

We are drifting into a new era which will, sooner or later, accept involuntarily the idea that the wage levels cannot be seriously disturbed, though to be sure dozens of plans to produce a five-day week are being offered as a means of accomplishing a balance between the new scale of production and the cost of labor. The discussion is all very theoretical still. The important thing is that slowly the leaders of thought are beginning to reconcile themselves to the fact that traditional methods of handling a stock market flurry or a business depression are going by the boards.

For one thing, the effort to produce a better economy at home without consideration of the demands of other peoples abroad, is bound, sooner or later, to be followed by an agitation for a world-wide perspective. While the United States may, for reasons that appear sound to those charged with responsibility, have felt the need for the stoppage of immigration, as well as the erection of a tariff wall, there is no doubt that both factors have produced some kind of repercussion abroad. It takes time for the rest of the world to adjust itself to American action, all of which tends to retard the recovery.

Herioc measures are being taken by major industries in the United States to keep production down, or at least to prevent its increase. The Sherman anti-trust laws are coming in for much comment because they alone stand in the way of concerted action to reduce production of basic products. The Supreme Court of the United States has decided that the law "cannot be evaded by good motives," which has caused many a business man to shiver, for unquestionably, in the present crisis, a number of steps have been taken which are plainly inconsistent with the Sherman law objectives. The question of whether the Administration which, on the one hand, is trying to restore prosperity and, on the other, is faced with a series of Supreme Court decisions, is going to apply its own "rule of reason" will probably never be answered to anybody's satisfaction. But the fact remains that in emergencies many things are done which are not countenanced when those same emergencies are passed.

THE passing observer will do well to note that the very discussion of stabilizing industries is significant. It means that each business and industry is finding it necessary to participate in cooperative processes in order to overcome the ill-effects of ruinous competition or the depressing crises that result from unlimited production.

Certainly, as the end of 1930 approaches, the business men of the country are intensively applying themselves to the job of reorganization. Some of the commodities are responding. Cotton, copper, wheat, and steel have been getting most attention. But the "weak situations" in the financial world that have had to be cleaned up from time to time, even though they represent an aftermath of the last three years of speculation, frequently developed for us a psychological reverse. In other words, favorable business developments on the one hand, have not had their full effect on the minds of people generally because coincident therewith have been announcements of bank suspensions which have reflected isolated instances of bad management or bad banking.

The growth of confidence in the last few weeks has helped, in no inconsiderable degree, in the development of a psychology that the recuperative process is at last under way.

Laboratory Photographs Illustrate Cause of Engine Knocks

CLEVELAND, Dec. 8

THE most discriminating fuel chemist in the world is the modern gasoline engine, according to statements made by T. A. Boyd of the General Motors Research Corp., in an address before the New York section of The American Chemical Society Dec. 5.

The address presented the results obtained by Lloyd Withrow of the General Motors Research Corp. on the characteristics of flame propagation in an internal combustion engine, and those by W. G. Lovell and J. M. Campbell on the chemical composition of anti-knock hydrocarbons. The method used by Dr. Withrow to obtain photographs of the progress of the explosion in a motor cylinder and the results obtained was described by the speaker as follows:

"A narrow quartz window extending all the way across the combustion chamber, or the full length of it, was placed in the top of the cylinder head. The length and location of this window were such that the whole sweep of combustion, starting from the spark plug and ending at the far side of the combustion chamber, was visible in the camera.

"The camera contained a very fast lens, with means for focusing it, and a rotating drum with a film wound once around it. This drum rotated at a constant speed, and in a direction at right angles to the axis of the window.

"What was obtained, then, when the shutter was opened was a moving picture of the flame as it dashed across from the spark plug to the opposite end of the combustion chamber. The picture differed from a regular movie, however, in that the shutter remained open all the time and in that the film moved at a constant speed, so that the image obtained was all in one piece and spread out on the film.

"Because of the way in which the pictures were taken, namely, with the flame moving in the direction from bottom to top and with the film moving simultaneously from right to left, the curve forming its left-hand edge became a plot of the progress of the flame across the combustion chamber.

"From the pictures of normal or non-knocking combustion, it could be seen, first, that the flame moves at a finite but not at a uniform velocity; and, second, that it takes about 40 degrees of engine revolution to cross the chamber. This means that, for a car running 30 miles per hour, the combustion of the charge takes only about four one-thousandths of a second to complete itself.

"The photographs of knocking combustion show how events differ from normal when detonation or knock is present. Then the flame starts off just as before, and proceeds for a while at a perfectly normal rate. But, when it reaches some point in its progress, then its rate becomes substantially infinite. In other words, it appears to jump instantly from that point to the end of the combustion chamber. As it does so, it projects a flash of intensified luminosity clear back through the whole combustion chamber.

"It is this combustion of a considerable portion of the charge at a rate that is substantially infinite which is the thing called knock. The differences in flame movement that occur when there is knock are confined to the latter part of the burn. The intensity of detonation is determined by the amount or the portion of the charge that is involved in this latter and extremely rapid combustion."

Research on hydrocarbons and their relative knocking tendencies by Lovell and Campbell was in the nature of corroboration of previous work by other investigators and carrying very much further the results previously obtained. These men determined the effect of various groups added to a straight chain molecule, on the detonation rating of the hydrocarbon, and found that the addition of each methyl group to the molecule increased the anti-knock property of the hydrocarbon. Centralization of the molecule, (that is, a grouping of the carbon atoms around one or more central carbon atoms), increased the anti-knock value of the molecule, the straight chain molecule of any number of carbon atoms showing the greatest knock tendency.

"Thus, in the case of the heptanes," said Mr. Boyd, "the anti-knock quality goes up by stages from that of the straight-chain compound normal heptane, which is the worst of the heptanes, to that of the heptane of greatest possible centralized structure (2, 2, 3—trimethyl butane). From the systematic way in which it has classified these various paraffin hydrocarbons, it can be seen that the gasoline engine is indeed a discriminating analytical chemist."

An engine run on fuel composed of the most centralized possible heptane would, Mr. Boyd explained, have a compression ratio four times as high as that of an engine run on normal heptane.

Refiners Asked Not to Draw on Crude Storage During Overproduction

By Paul Wagner
N. P. N. STAFF WRITER

DALLAS, Dec. 5

RESOLUTIONS requesting refiners to buy all the crude they can run under present conditions of demand and not to withdraw crude from storage were adopted by the general Mid-Continent Oil & Gas Association at its annual meeting, Dec. 5.

The association also endorsed a tariff on oil and created an advisory committee to correlate work of prorating production in regions of over-supply.

William N. Davis of Phillips Petroleum Co., Bartlesville, was elected president for the eleventh consecutive term. Wirt Franklin, president of the Independent Petroleum Association of America and the Mid-Continent territory's foremost tariff advocate, was named vice president for Oklahoma.

Other state vice presidents named were Ed A. Landreth, Landreth Production Co., Fort Worth, for Texas; J. R. Crawford, Shreveport producer and drilling contractor, for Louisiana and Arkansas; Tom C. Johnson, Wichita operator and Kansas proration umpire, vice president for Kansas; and Judge J. M. Hervey, Santa Fe, New Mexico vice president. Harry H. Smith, Tulsa, who has been secretary-treasurer since inception of the association, was re-elected. The resolution against refinery withdrawals from crude oil stocks gave as a reason that any such reduction would be at the expense of producers who are now endeavoring through proration practice to curtail their yields within market demand.

Another resolution called upon purchasers of crude and pipeline carriers to arrange their "takings" so as to assure to every producer participation in the market outlet to the extent of his allowable production under proration.

The resolution also asked all producers of oil to accept the principle of proration, especially that of ratable production and ratable sale of oil from any given pool.

Purchasers and pipeline carriers were further asked to make all reasonable extensions of gathering facilities; to effect loans, leases, sales and exchanges of pipeline and gathering facilities to and with other pipeline carriers and, where possible, exchange oil in line with authorizations of conservation agencies in the states involved.

An advisory committee on proration, which will act as a central correlating agency in support of curtailment measures, was created. Its main function will be to assist in coordinating and perfecting practices in proration so far as it will be a positive aid as distinguished from interference with work of state committees or governmental bodies.

FUNCTIONS of the committee were proposed to be as follows:

(1) Act as a fact-finding body to ascertain and disseminate facts while they are new and valuable to the various proration committees and the producers throughout the southwest.

(2) To act as an agency for the promotion of market outlets for the southwestern region in order that the southwestern oil pools may enjoy their fair share of whatever market demand exists.

(3) To examine into the art and science of proration and curtailment by any reasonable method in order to assist local state committees and governmental bodies by helpful and worthwhile suggestions along that line.

(4) To study and promote amendments of state laws in order that they may be adequate for the purpose and sufficient to prevent inequalities and discrimination, and in this connection to assist the producers in Kansas to formulate a proper law for that state.

IN THE beginning, the correrelating committee conists of William N. Davis, association president; Edwin B. Reeser, Tulsa, president of the American Petroleum Institute; Robert R. Penn, Dallas, production division vice president of American Petroleum Institute and chairman of the central prorating committee of Texas; Lee Scott, Vickers Petroleum Co., Wichita, statewide chairman of the Kansas prorating committee; Alvin Richards, Tulsa, statewide chairman of the Oklahoma prorating committee; Ray Collins, Tulsa, Oklahoma umpire; David Donoghue, technical advisor to the central prorating committee of Texas; Tom C. Johnson, Wichita operator and Kansas umpire; and such others as the committee sees fit to add.

A technical sub-committee will consist of Clarel B. Mapes, technologist of the general association at Tulsa headquarters; David Donoghue of Fort Worth; Floyd Pickrell, assistant to the Kansas umpire, and such other engineers and technologists as the group may select.

Action on a proposed tariff came after introduction of a resolution by Wirt Franklin, seconded by Robert R. Penn. This was precipitated by remarks of President Reeser of the American Petroleum Insti-

tute, Messrs. Franklin and Penn, regarding importation of Soviet gasoline into the United States and the proposal of the city of Baltimore to erect wharves and terminals for the entry and storage of Russian oils.

Mr. Franklin made an impassioned talk against imports generally, including crude and refined oils from South America, reaching the crux of his discussion with remarks on the recent entry of a cargo of Russian gasoline at Baltimore.

The tariff resolution reads as follows:

"Whereas, imports of crude petroleum and refined products are continuing to come into the markets of the United States from foreign countries and that gasoline is coming in in ever-increasing amounts having increased for the first nine months of 1930, over the same period of 1929, approximately 125 per cent, and,

"Whereas, gasoline can be and is being produced, refined and delivered into the United States at a price far below the price at which it can be produced and refined in the United States, and,

"Whereas, during the recent months there has been landed at Atlantic seaports cargoes of gasoline from Russia which promises to continue in ever-increasing amounts, owing to the favorable position in which the Russian oil industry is now in. And

"Whereas, the apparent sincere efforts on the part of some importing companies to develop the program that would decrease the imports in proportion to the decrease of production in the United States have signally failed.

"Now therefore, be it resolved by the Board of Directors of the General Mid-Continent Oil and Gas Association, duly assembled at Dallas, Texas, on this the 5th day of December, 1930, as follow:

"First: That we endorse in principle the program to obtain legislation that will impose a tariff on all imports of crude and refined products, that will place oil and refined products of the United States in position of equality with that of the foreign countries; and,

"Second: Be it further resolved that this association pledge its support unreservedly to such program and direct its officers and members to aid and assist in presenting to the congress of the United States, and to the president of the United States, the immediate necessity of such action as will protect the petroleum industry of the United States from complete demoralization and prevent that part of such industry not engaged in the importing of petroleum and its products from complete destruction."

A resolution presented by Capt. J. F. Lucey of President Hoover's emergency committee for employment was drawn by him and President W. S. Parish of Humble Oil & Refining Co., Houston. It pledged directors of the association to do all within their power to assist in relieving the present unemployment situation and further pledged cooperation with the president and his committee.

Companies are called on to retain in their employment the maximum number of employees consistent with conditions existing in their respective companies and consonant with sound business principles.

Prorating the Work To Be Done To Prevent Unemployment

TULSA, Dec. 6

PRORATING the amount of work to be done, as well as the oil they produce, is becoming almost the general policy among Mid-Continent oil companies, as a means of preventing unemployment.

The method was endorsed by the Mid-Continent Oil & Gas Association at its annual meeting last week in Dallas, after hearing a talk by Capt. J. F. Lucey, Lucey Petroleum Corp., of President Hoover's Unemployment Commission.

Comparatively simple to work out, the system has afforded steady work, at a slightly reduced income, to hundreds of oil workers who might otherwise have to be laid off for a time. At the same time, company labor bills are brought down, and kept in line with the amount of work going on.

For example, in a district employing 30 workmen, exclusive of foremen, or superintendent, the present amount of work may not justify more than 25 men. Instead of laying off the surplus five men, the work is prorated among the 30, each man earning a little less than he would were the work done by only 25.

The allotment of work is handled in much the same manner that the duty rosters were run in the army. With 30 names on the list, and but 25 men needed, the first 25 men on the list are used, the last five laying off without pay. The second day, the working list starts with the sixth name on the list, the first five men laying off. The next day the workers start with the tenth name, and so on. In this manner, each man gets 25 days work out of the 30-day month. And the company payroll per day is but for the necessary 25 men.

To the employer, the principal advantage is that as the men are paid only for the time they work, and as only the necessary number of men per day are worked, the payroll is kept proportional to the necessary work.

Where layoffs must be made, preference is given men who have been with the company a certain length of time. The length of service varies with the companies, some adopting this policy for men with two years' service, some for those with one, while for others longer periods are required.

Many companies maintain accident, or life insurance of one sort or another for employes. This may take the form of regular group insurance, or it may be handled by the employes themselves as a mutual benefit proposition. In many cases where enforced layoffs are made this protection is still carried for the employe. Company policies are kept as flexible as possible to make the necessary action fit the requirement of each case as it arises.

Purchasers Plan to Serve Small Wells After Prairie Ceases Buying

TULSA, Dec. 6

CONFIDENCE that measures would be worked out to assure the ratable purchase of oil from the thousands of wells in Oklahoma and Kansas that are affected by the Prairie Oil & Gas Co.'s latest move was expressed Saturday by leaders in the proration work of the two states.

"It is going to be done," said Umpire Ray M. Collins, "because it has to be done. There is no point in debating the merits of proration. The districts that are paralyzed must be given relief."

After 30 years as purchaser of oil the Prairie withdraws entirely on Jan. 1. It made the announcement on Dec. 4 after several weeks of cutting off purchases here and there in flush and semi-flush areas of Oklahoma, Kansas and Texas. On Nov. 29 it made it known that it would purchase one-third of the production from the so-called Class A wells—those of small yield that recently were brought under the proration system and six days later announced than it was retiring as a buyer altogether.

Exclusive of those owned by the Prairie some 32,000 small wells, making 29,000 barrels daily, were served by this company in the three states as purchasers. At the moment they are without a home—or will be on Jan. 1. It is expected that partial relief will be given by other companies before the first of the year arrives.

It is not clearly indicated as yet what that relief will be, that is how it will be applied. The only method, of course, is the entry of other buyers into those regions. In many places the Prairie Pipe Line Co. is the only line connected to the properties and in others it has run the greater part of the oil.

The Nowata field, for example, is served by three pipe lines. The National Refining Co. has a gathering system which moves oil to its Coffeyville refinery. The Stanolind Pipe Line Co. takes a small amount of production and the Prairie has been buying more than the combined purchases of the other two. This is an old district that had a revival of interest a few years ago when the possibilities of repressuring with air were learned. It is one of the many old, settled fields that must be dealt with.

ONE plan now up for consideration in this district is the leasing by other purchasers of parts of the Prairie gathering system, or arrangement with the Prairie to gather the oil for the account of other buyers. Some such arrangement will have to be made, for as said, the Prairie lines are the only ones in striking distance of hundreds of properties and the expense of laying new systems is too great for anyone else to consider.

The statement made by the Prairie Oil & Gas Co. that told of its retirement as buyer was as follows:

"For years the Prairie Oil & Gas Co. as a crude oil purchaser has given its best efforts to obtaining and holding market outlets for its crude oil purchases. For the protection of its producing and refining customers it has, from time to time, increased its oil in stock when its market outlet did not equal its purchases.

"The market outlet of the company has been reduced to the extent that it now announces that, effective Jan. 1, 1931, and until further notice, it withdraws as a general purchaser of crude oil. This action is in accord with its recent statement of policy that its crude oil purchases will be kept within the requirements of its markets. The company is now and always has been an advocate of conservation and of proration and will continue to operate in harmony therewith.

"The fact that the Prairie Oil & Gas Co. will cease its general purchase of crude upon the market does not prevent the producers from whom it has heretofore purchased oil from selling and having their oil transported by available common carrier pipeline facilities to such market outlet as the producer may have."

The decline in business has been a sharp one. In November, 1929, the Prairie Pipe Line Co. delivered to customers an average of 206,173 barrels daily and in November, 1930, its deliveries averaged 88,395 barrels. A small part of this volume was common carrier shipments but more than 90 per cent was oil shipped by the Prairie Oil & Gas Co. to its customers.

Some of the loss in business has come through the decrease in requirements of refiners and part has come through former customers of the Prairie making their own arrangements. The Texas-Empire Pipe Line Co. played its part in the diversion of traffic and recently the Ajax Pipe Line Co. has cut in still further. While this system is not quite ready to deliver oil, several of the refiners who will be served by it have ceased purchasing and are operating on oil in storage at the plants.

FROM one cause and another the Prairie Oil & Gas Co.'s brokerage business has reached the level where it can be supplied from its own large production and that is the policy that will be followed.

For the moment this action has thrown the whole proration machinery out of mesh. While there is yet a sentiment of some proportion toward the abandonment of proration effort altogether, the consequences of such a course are more clearly

in sight than they were. The withdrawal of the Prairie affords the clearly defined illustration. Thousands of persons would be added to the list of the unemployed and industrial demoralization would speedily occur.

The majority of oil men are for a continuance of proration on a basis that will enable every operator to dispose of at least a part of his oil until the time comes when, through cessation of drilling and the consequent failure to find new pools, the flush production will have been greatly depleted. That, as it well recognized, means continuance of proration for many months.

Drilling operations are tending downward rapidly. Comparative figures on Oklahoma, Kansas and Texas for Jan. 1 and late November are as follows:

	Drilling		Shut Down		Total Operations	
	Jan. 1	Nov. 22	Jan. 1	Nov. 22	Jan. 1	Nov. 22
Oklahoma	612	318	224	203	1,039	629
Kansas	261	146	76	36	415	226
Texas & New Mexico	627	408	374	369	1,361	989
	1500	872	674	608	2,815	1,844

The columns on total operations include rigs and locations not segregated in the tabulation.

Few wildcats are being started in any part of the country today. Price is the deterrent in all sections and in Oklahoma an additional factor is playing a part. The latest order of the corporation commission limits all wildcats that find production to 50 barrels per day. That would be a total return of 18,250 barrels in a year and, to the operator after deducting the customary one-eighth royalty, 15,978 barrels. That is about that many dollars, out of which must also come a three per cent gross production tax.

A $50,000 wildcat would be three years returning its cost, not including a number of charges such as cost of day to day expenses, federal taxes, etc. So, with this condition to face, nobody wants to drill a discovery well. In some cases it means the surrender of a lease whose expiration date is near, unless a renewal can be obtained on favorable terms. Much acreage is being turned loose and it is becoming much easier to take a renewal, for competition on acreage has been reduced greatly.

Texas Producers Seek Market Outlet for Distress Crude

HOUSTON, Dec. 7

STEPS looking toward the elimination of distress crude oil sales from Texas markets progressed under handicaps at conferences held throughout the week by Ranger, Wichita Falls and Panhandle district operators. When successful the adjustments of facilities and markets contemplated will remove the menace of some 19,000 barrels daily of distress oil described as contributing largely to setting the country's crude and refined markets at levels lower than considered justified.

Wichita Falls and Ranger operators have acted toward readjustments that will give established crude oil outlets and equitable runs to isolated wells and leases. Some of these have not been served in the past by established purchasing agencies because of their remote location, and others have found outlets only at under the market prices for crude paid by distress oil buyers who in turn cut refined oil prices because of the cheapness of raw materials used.

Adjustments have been made possible and machinery for handling the problem has been worked out under state orders permitting exchanges of pipeline facilities, readjustments in runs or loans of crude in such manner as will bring about equitable disposition of daily production under proration practice.

Purchasers will meet with the Panhandle district prorating committee later in the week in efforts to adjust conditions in the Amarillo territory similar to those in the Wichita Falls and Ranger areas. In the Panhandle there is now about 16,000 barrels daily of crude oil from 208 properties, and approximately 415 wells that is not being run by pipelines.

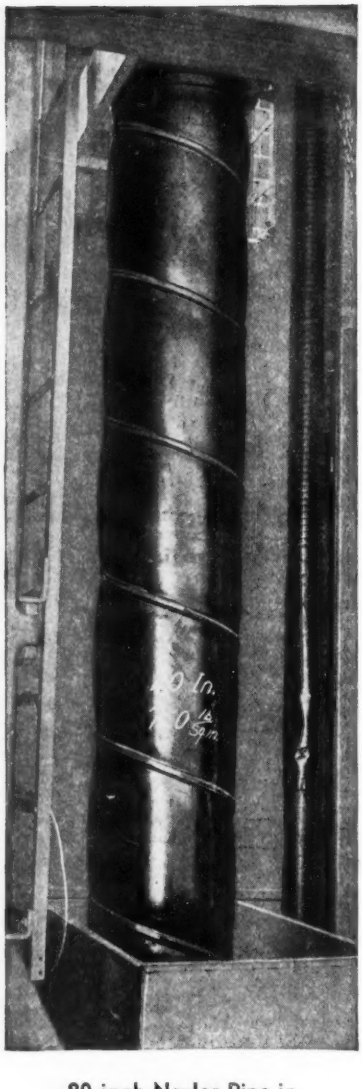
The Texas program to cut daily production to approximately 680,000 barrels daily in the present proration term was aided by the Big Lake Oil Co.'s reduction through tubing of its largest 8500 foot well in the Regan county field of West Texas. Production of C-4 University was cut from a peak of 4361 barrels to 1754 barrels daily after being successfully tubed. Total production of the seven wells producing at depths below 8500 feet at Big Lake now approximates 12,830 barrels daily. This is a net reduction of nearly 1600 barrels daily for the field.

In Howard and Glasscock counties of West Texas, where the Cosden Oil Co., a week ago posted a 50 cents flat price for crude, the producers are reported withdrawing connections. The district's prorated outlet is being reduced from 26,600 barrels daily the last half of November to 17,050 barrels the first half of December.

Efforts to have the Texas railroad commission limit production from wildcat wells to 50 barrels daily and curb production of any well in Texas below 500 barrels daily apparently has been defeated by legal complications. Assistant Attorney General, Lawrence has advised Chief Supervisor Parker of the Oil and Gas Division that except where wells are under proration the constitutional rights of operators or individuals prevent such orders.

LIGHT WEIGHT Naylor Pipe

Withstands High Pressures



20-inch Naylor Pipe in Testing Machine during Internal Hydrostatic Pressure Tests

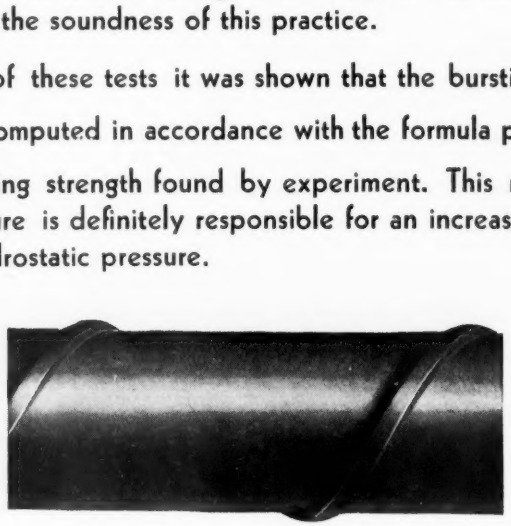
No. 2—Internal Hydrostatic Pressure Tests.

Every length of Naylor Pipe is tested to the pressures indicated in the following table:

Diameter of Pipe	Mill Test Lbs. per Sq. In.	Diameter of Pipe	Mill Test Lbs. per Sq. In.
6″	900	14″ O. D.	450
8″	800	16″ O. D.	400
10″	700	18″ O. D.	350
12″	500	20″ O. D.	325

Extensive tests recently made by Professor M. L. Enger and W. M. Lansford of the Materials Testing Laboratory of the University of Illinois, bear out the soundness of this practice.

In the course of these tests it was shown that the bursting strength of Naylor Pipe computed in accordance with the formula $p = \frac{2ts}{d}$ was less than the bursting strength found by experiment. This means that the Naylor Structure is definitely responsible for an increase in resistance to internal hydrostatic pressure.



Catalog 30-2 gives you complete engineering and metallurgical data.

NAYLOR PIPE COMPANY, Main Office & Plant, 1230 E. 92nd St., CHICAGO

SALES OFFICES

3116 Chrysler Bldg. New York ♦ Witherspoon Bldg. Philadelphia ♦ 507 Philtower Bldg. Tulsa ♦ 2301 Commerce St. Houston ♦ 402 Petroleum Bldg. Ft. Worth

MONTREAL, CANADA: Mechanical Equipment Company, 660 St. Catherine St., West

CHAMPION & BARBER, Inc.
506 Subway Terminal Building
Los Angeles, California
Exclusive Distributors:
California, Nevada & Arizona

C. H. ELSTNER
Apartado 284
Monterrey N. L., Mexico
Representative in Mexico

TONCAN COPPER

Naylor Pipe

Maximum Structural Strength — Mo-lyb-den-um IRON — With Minimum Weight

Standardized Naylor Pipe is made in sizes 6″ to 12″ I. D. and 14″ to 20″ O. D. in any uniform length desired up to 40′0″. Ends made to wrought pipe standards for all types of coupling.

Toncan Copper Molybdenum Iron possesses a superior corrosion resistance, making it the favored pipe material.

Where corrosion is not a problem, Naylor Pipe can be furnished in steel.

THIS department has received a letter signed by Mr. Henry R. Ketchum, of Tulsa. Mr. Ketchum, prominent hotel man, wants to know the answer to certain questions, all leading up to the specific idea of getting more business. It happens that the questionnaire appeals to us. For years we have been gathering material which will one day issue between covers, cloth $2.50; full leather, $6.00, and which will be titled "Some Day I'm Going to Build a Hotel."

In replying to Mr. Ketchum's letter, we shall give him very little of the material that will be in our book. If he wants that, he will have to step up like a man and buy a copy, just as anyone else will, we hope, do. We have, however, no objection to giving him a civil answer to his entirely civil questions. Our reply must, of necessity, be fabricated so as to fit any hotel; we have no recent acquaintance with the New Hotel Tulsa, which Mr. Ketchum owns. Nor have we hesitancy about letting the public know our thoughts on hotels, and here are some of them, along with Mr. Ketchum's queries:

1—Are you planning sales conference this year?

We have no definite plans in this respect. It may be that our creditors have, with the idea of organizing sales of our few assets. If that comes to pass, we shall be glad to use our influence to throw the conference and banquet, if such is held as part of the general gloating, to your hotel.

2—Are you planning a banquet for your employes?

Our employes are two in number, a wife who gets no salary and a person of all work who does. No banquet is in prospect, although we do recall that something was said about eating out a week from Friday, as the skillet wielder plans to have illness in her family that day. Would be glad to consider sealed bids on dinners for three, two adults and one child, making the equivalent of four meals in all.

3—Do you plan to attend any conventions which we might help to bring to Tulsa?

We have longed for years to bust up a meeting of the Anti-Saloon League, but lack carfare. If you can arrange to have them meet in your hotel, we shall be much obliged.

4—Would you be interested in learning more about our meeting rooms, banquet prices, etc?

At the moment our attitude toward such frivolities of the idle rich may be described as one of lofty hauteur.

5—Is there anyone connected with your firm who might be interested in our monthly permanent rates?

I'll ask one. How would you like to trade lifetime occupancy of one of your rooms for a house, assuming the taxes just about due and all the painting and decorating that should be done?

6—Will you suggest how we may secure more patronage from your organization for our new coffee shop?

Put coffee back to a nickel.

7—If you are a member of a civic club which is not meeting with us, will you suggest how we may interest them in doing so?

Our lodge affiliations are few, the principal one being an honorary membership in the Lease Brokers' and Independent Producers' Sodality, which meets at Ike's Chili Parlor whenever a brother sells a lease or salvages a string of pipe.

8—Can you suggest how we might improve our service?

Wait for our book on the subject and you will know all.

* * *

One of the good stories we have heard recently was told by W. L. Connelly, vice-president of the Sinclair Consolidated. He was with the party, which included H. F. Sinclair, that visited Germany recently. After a day of looking over the oil fields the party returned to Hanover. There were three in a hotel room and one of the party said he believed he would have a drink. The others said they didn't care for any. The one called a waiter, who came to the room to get the order. It was for a Martini.

"Drei?" asked the waiter.

"Sure, I want it dry," said the customer.

When the waiter reappeared he was bearing drei, or three, cocktails.

* * *

Traveling on the steam cars recently and chatting of this and that with A. Jacobson, president of the Amerada Petroleum Corp., we came into view of a very nice fire. As the train drew alongside it was determined to be a farmer's house or barn. Mr. Jacobson gave an exclamation denoting deep disgust.

"I had hoped it was a tank of oil," he said.

* * *

E. K. Carey, oil producer and drilling contractor, has moved from Blackwell, Okla., to Wichita. He is active in the Decker gas field of McPherson county, Kans.

* * *

Barney Blankenship, sales manager for Tide Water Oil Sales Co., Tulsa division, has been given a leave of absence and will spend the winter in

Outside the city limits and near the scene of operations, the Indian Territory Illuminating Oil Co. recently completed and occupied its own building at Oklahoma City. Land and legal departments still maintain offices in the city. This is a division office, general headquarters being in Bartlesville

the south. Impaired health was the cause of the move.

* * *

Died: In Wichita Falls, Marvin E. Morgan, of Iowa Park, Tex. He was head of the Morgan Oil Co. and has other business interests in north Texas. He was 41 years old.

* * *

Died: In Tulsa, Robert M. Galer, 38 years old. He was one time chief engineer of the Carter Oil Co., later head of that company's land department. This was at the start of his oil career. In 1918 he became head of the land department of the Oklahoma Central Oil Co. and a year later helped to organize the Bradstreet Oil Co., continuing as vice-president of the company until 1923. He then formed the Galer Oil Co., with associates. For the six months prior to his death he was associated with the Red Bank Oil Co. He is survived by his widow and two children.

* * *

Recent announcement by President T. A. Dines, Midwest Refining Co., says that George H. Jaques, vice-president in charge of operations at Casper, will move to Denver, general headquarters of the company, and that eight or 10 other Midwest men will make the same change. Otherwise, said Mr. Dines, the Casper offices will be undisturbed.

* * *

M. P. Yonker, manager of refinery operations for the Phillips Petroleum Co., is moving from Bartlesville to Tulsa, where headquarters of this division will be maintained.

* * *

Charley Bopp, engineer with the U. S. Bureau of Mines, is in an excellent position to sympathize with the problems of the chicken crossing the road. He's darn lucky not to have been assigned a harp, or a shovel, as the case may be.

With a companion (male) Charley was driving toward Oklahoma City, having got as far as a little way beyond Edmond. The car stopped, or perhaps was stopped, and Charley got out and started to go across the road toward some bushes on the other side. They were, we think, blackberry bushes. The plan, we think, was to pick blackberries.

He took his first step, and found he was directly in the path of a car coming at that speed known as "about 45." There was no time to run, nor any very safe looking place to run to, so Charley did the next best thing. He went backwards.

If we remember our gymnastic terminology, what he did was a back flip. At any rate, he managed to get his legs high enough to clear the car's wheels. The tops of the fenders slid under them, and tossed him in a perfect back somersault, or "loop." Except for the thrill, which still lingers on, Charley reports that there were no lasting results from the adventure.

Died: In Pawhuska, Okla., James R. Craun, 66 years old. He was active up to a year and a half ago as scout in the Osage district for the Carter Oil Co. and was the oldest scout in the oil business. He was originally a telegraph operator for the Buckeye Pipe Line and came to Oklahoma with the Prairie Oil & Gas Co., later joining the Barnsdall company and in 1917 the Carter. He is survived by his widow, three sons and two daughters.

* * *

Died: In Titusville, Pa., John R. Wheeler, 64 years old. He had been a member of the legal department of the Sinclair Oil & Gas Co. In Tulsa since 1916 and prior to that had been with the producing firm of White & Sinclair. Funeral services were held in Titusville.

* * *

Ralph M. Moon, former sales manager for the Imperial Refining Co., has become Tulsa representative for the Rock Island Refining Co., Duncan, Okla.

* * *

C. M. Byron, manager of the Continental Supply Co.'s store in Parco, Wyo., has been made temporary manager of the district offices in Casper. L. D. Williams, district manager for several years, has resigned and has moved to Tulsa. He had been in Casper four years.

* * *

Ohio Oil Co.'s New Mexico operating offices are being moved from Artesia to Hobbs. A. C. Brown is the superintendent in charge.

* * *

Part of the purchases for the Eldorado refinery of the Skelly Oil Co. henceforth will be made through the Tulsa general offices. W. M. Ball, assistant purchasing agent, and L. R. Bell, material clerk, wil move to Tulsa. H. A. Miller, purchasing agent for the refining division, will remain in Eldorado.

* * *

Kenneth C. Heald, staff geologist of the Gulf companies, Pittsburgh, was recently elected a fellow of the Royal Geographic Society, London. This is a distinction rarely conferred upon Americans.

The big red Halliburton trucks that you see in the field do their work amazingly well; but they are merely the visible symbols of the intense research and scientific study that goes on constantly in the Halliburton laboratories . . . . To meet Halliburton standards the strongest commercial trucks are rebuilt to make them *stronger;* the most dependable pumps are strengthened to make them *more dependable;* valves, fittings, plugs and mixing device are all especially designed to give your well the maximum protection to which its liquid treasure entitles it.

HALLIBURTON

OIL WELL CEMENTING CO.

Duncan, Oklahoma

Would you, as a reader of NATIONAL PETROLEUM NEWS, like to receive copies of THE CEMENTER as issued? Each number contains interesting information about cementing and drilling fluids. There is no cost or obligation—simply sign your name below and mail to Halliburton Oil Well Cementing Co., Duncan, Oklahoma.

Name..... **Address**.....

New Cromwell Sand Area in Oklahoma; Two Kansas Pools Extended

TULSA, Dec. 6

SEMINOLE county was the hot spot in Oklahoma during the past week with a new Cromwell sand pool looming as a possibility. The north Carr City and the Sacred Heart areas were both improved, the former with an extension to the southeast that is as good as the discovery. In the Oklahoma City pool the big ones continued to come in on the north end though the number of operations is considerably reduced.

Kansas had an exceptionally good week as far as extensions were concerned, with the Ritz pool of McPherson county leading the excitement. The border of the Welch pool in southeastern Rice county was moved one-half mile to the south. The rest of the state was quiet with no outstanding reports in the wildcat areas.

The most interesting completion in the Panhandle of Texas was in Moore county where a wildcat in the north central portion came in for a large initial. In Gray county, the east edge of the dolomite area west of Pampa seems to have been found.

Seminole County

A map showing the location of the week's outstanding completion in Seminole county, Okla, is shown herewith. This well, the Atlantic Oil Production Co., No. 1 Fixico, NE NW SE, 15-11-8E, topped the Cromwell sand at 3523 and at 3525 flowed 180 barrels in 45 minutes. It is now shut in for tankage. The gravity of the oil, 38.9 degrees, and the pay horizon indicate that the well is located on a similar structure to that of the Cromwell pool, the northern tip of which is shown at the lower end of the map.

That the new area is not to be large is evidenced by the number of dry holes in the immediate vicinity. Many of these wells were drilled even deeper than the present producer and their shows were anything but encouraging. This failure may be due to the same causes for unproductive wells that were found on the north end of the Cromwell pool. Tight limy sand conditions were the controlling factors. Such a producing horizon is bound to be spotty and erratic though it is quite possible that a small group of producers may be developed. A real test of the present well should give some idea of just how good they are likely to be.

The Robinson & Hicks well in the NW NW SW, 5-6-5E, Pottawatomie county, was deepened from 4309 to 4358 without any increase in oil. This well is two miles south of the St. Louis pool in what is called the Sacred Heart area. It is bottomed in the Simpson dolomite and for the past two weeks has been giving promise of adding a new pool to the Greater Seminole district. At the present time it is standing full of oil though it does not show any inclination to flow.

In the SE NE SE of 3-8-5E, Seminole county, the No. 4 Brown of the Empire Oil & Refining Co., extended the North Carr City pool one location to the east. The initial of the well on the gas lift was 3269 barrels from a total depth of 4121. Drilling in this new area is proceeding rapidly and most of the wells are proving to be good producers. The pool is not expected to be large however.

Oklahoma City

There were a number of large completions in the Oklahoma City pool though all were in the proven sand area on the north and west. The most outstanding of these, in point of size, were the Skelly Oil Co., No. 1 Harper, S/2 NE NE NE, 3-11-3W, and the British American Oil Co., No. 1, SW NE SE NW 10-11-3W. The former produced 9977 barrels in four hours and the latter made 5436 barrels in one hour and a half.

New wells in the Oklahoma City pool were of secondary interest during the past week however. The question of how to produce those already in and what to do with the oil was considerably more important. The catching up process of the wells that were behind in their proration schedules is just about complete and the time proration plan is getting beyond the embryo stage. The 12,000 barrell cut in the takings from the pool by the Prairie pipeline has already been partially offset by other lines, so that the daily average of around 90,000 barrels is being maintained. This, however, does not offer the desired relief for many of the operators.

Some very interesting figures regarding well potentials are likely to be the result of the latest order of the corporation commission. This order states that potentials will be determined in the future on the basis of a four hour open flow gauge and not on 15-minute flows. It is quite probable that most of the previous estimates will be revised downward in no uncertain manner.

Kansas

The outstanding well in the state of Kansas was that of Lario et al in the SE NE SE, 1-20S-2W, McPherson county. The well represents a small extension to the northeast for the Ritz pool. It is a Chat producer, logging this formation from 2919 to 2965, and had an initial of 2584 barrels. The company is already digging the cellar for the second well one location north.

Half a mile to the south in the heart of this growing pool there were two other completions that compare in size with the one above. These were

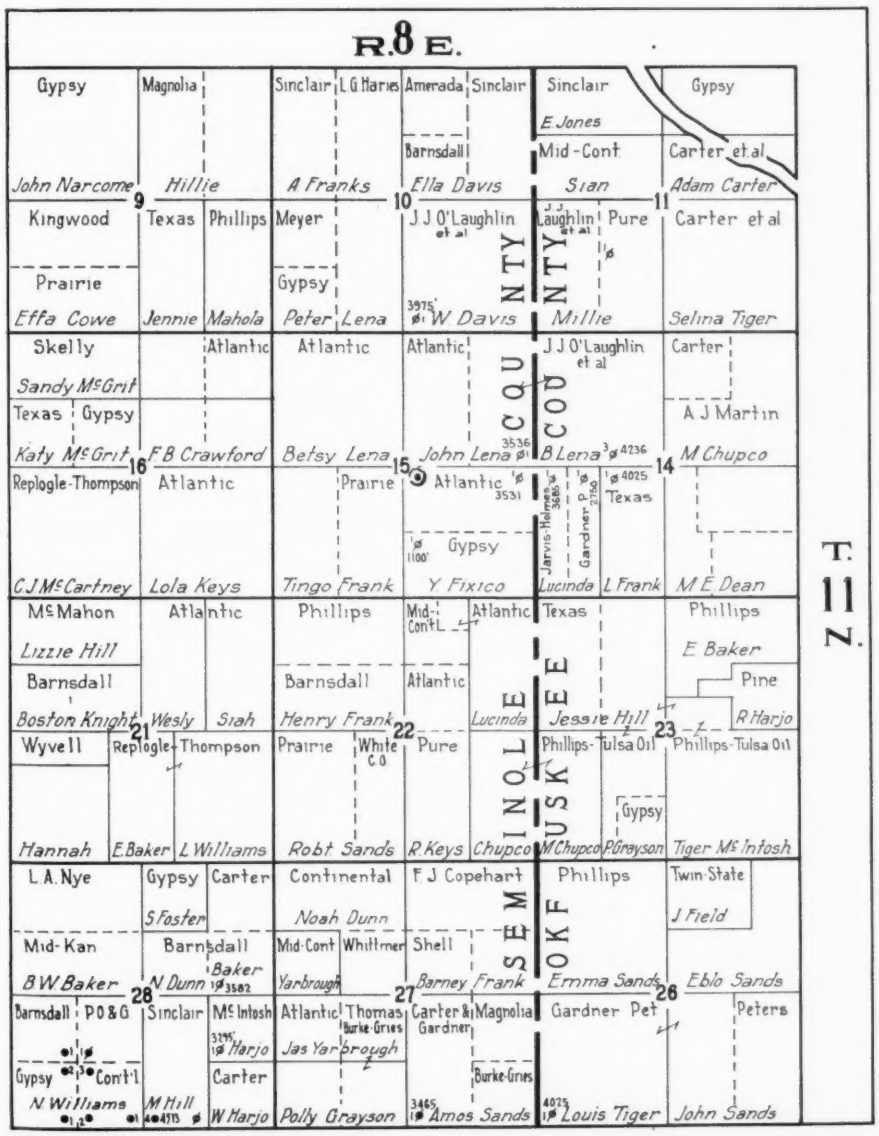
the No. 2 E Ritz of Palmer et al, NE, cor. 7-20-1W, and the No. 4 Munn of the Texas Co., SE NE NE, 12-20-2W. Both are Chat wells, the former producing 1008 barrels in 12 hours and the latter 1521 barrels in 21 hours. The Ritz pool now has all the ear marks of a major producing area.

In the southeast corner of Rice county, the old Welch pool was given a one-half mile extension to the south by the discoverer of the original pool. This well, the Hipple & Rogers No. 1 Raimy, NE NW SE, 3-21W 6W, topped the Chat pay at 3370. At 3377 it swabbed 250 barrels in 12 hours, and on being deepened to 3390, flowed 167 barrels in one and one-half hours. When shut in for lack of tankage it was flowing at the rate of 75 barrels per hour. Standolind pipeline is to connect and further drilling may be looked for in the near future.

The Schurr pool in the southwest corner of the same county finds itself in a rather peculiar position. With 10 wells in, and a potential production of about 12,000 barrels, it has been waiting for several months for a pipeline outlet. This week the 8-inch line of the Prairie was completed and then the company withdrew as a purchaser.

Texas Panhandle

The most important completion in the Texas Panhandle was that of the Shamrock Oil & Gas Co., in the NE NE NE, 355-44-H&TC, Moore county. Bottomed in a lime pay from 3495 to 3545, the well swabbed 600 barrels of 44 gravity crude in 12 hours. This is by far the largest well that has yet been found in the north central portion of the county and gives further evidence of the existence of a real pool in the region. The company staked out the location for another well immediately though it is one and one-quarter miles northwest of the well. Should this prove to be as good as the No. 1 considerable activity is likely to result.



Map showing the location of the new Cromwell sand strike in NW NW SE, 15-11-8, north of the old Cromwell pool in Seminole county, Oklahoma. Note the number of dry holes in the neighborhood of the new well

Right to Limit Production To Be Tested in Court

LOS ANGELES, Dec. 4.—A Superior Court test case of the right of operating oil companies to curtail production in conformity with existing California proration orders is expected as the result of an impending suit between The Texas Co. (California) and D. G. Vedder and wife—land owners of approximately 480 acres in the Mt. Poso area, Kern county.

The Texas Co. holds an operating and drilling contract on the acreage that was issued by the United States government to Mrs. Vedder. It is the claim of the land owners that the oil company is in default of its contract through its failure to operate four producing wells on the acreage to full capacity.

They also contend that there is an implied covenant in such a contract that requires the operator to operate producing wells continuously and at full capacity.

Since the government lease has already run three years of its 20-year life, the Vedders claim that if production is curtailed their profits from the land will be greatly reduced.

Nearly a month ago the property owners served notice on The Texas Co. that its contract was forfeit because of default and the present suit was filed by the oil company to restrain the Vedders from canceling the lease. In its arguments The Texas Co. filed affidavits from officers of Shell Oil Co., Union Oil Co., and General Petroleum Corp. and also from the Secretary of the Interior to show that overproduction exists and that the government favors curtailment.

Temblor Formation Found in Deep Test in Lost Hills Field

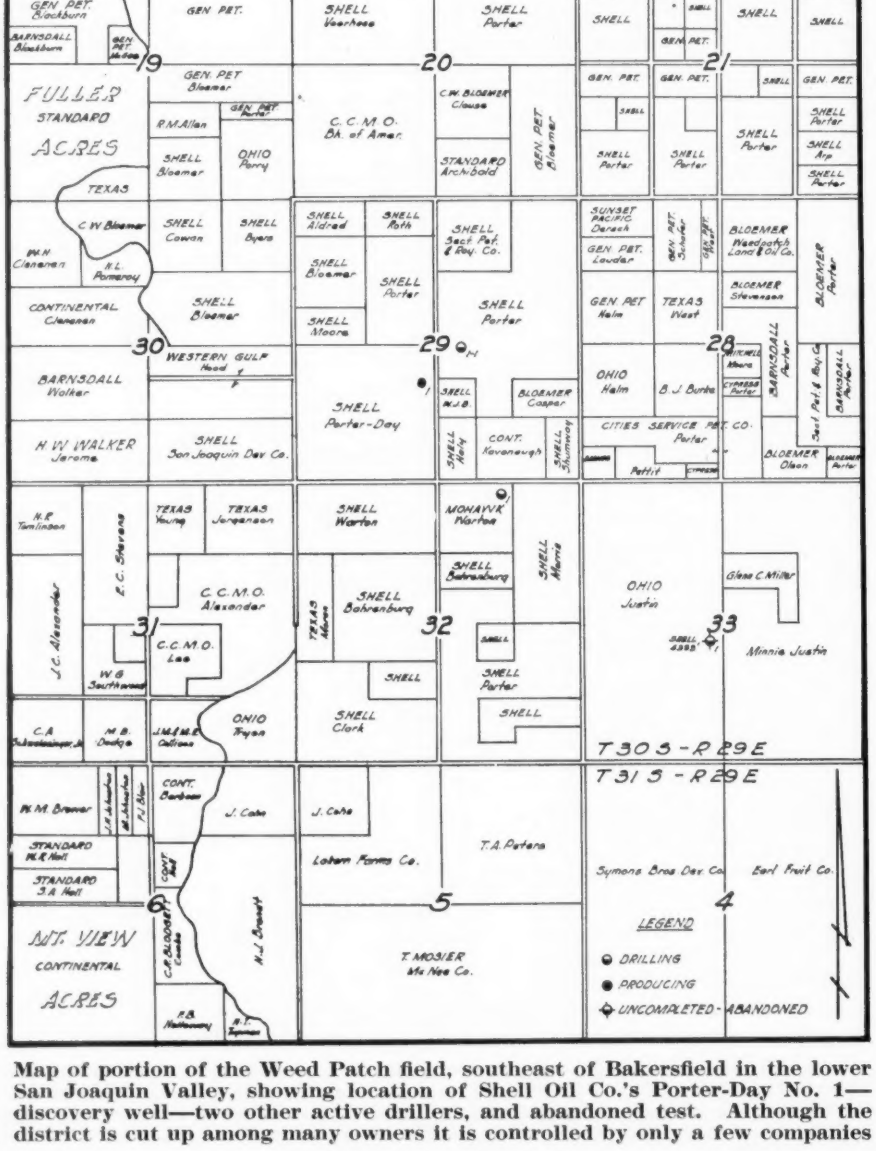
By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Dec. 5 PENETRATION of what is believed to be the Temblor formation in a lower San Joaquin Valley deep test, featured California production news the past week.

Two other projects in this area—one a wildcat test nearly fifteen miles from proven production and the other a deep test in a proven shallow field—were being watched with considerable interest as the crews prepared to drill out the cement for production tests.

Still another interesting and important test is expected within the fortnight on a well seeking an extension of the Elwood tidelands, northwest of Santa Barbara.



Map of portion of the Weed Patch field, southeast of Bakersfield in the lower San Joaquin Valley, showing location of Shell Oil Co.'s Porter-Day No. 1—discovery well—two other active drillers, and abandoned test. Although the district is cut up among many owners it is controlled by only a few companies

Confirming the theory that a deeper and more profitable producing horizon would be developed in the Lost Hills field, Universal Consolidated Oil Co., subsidiary of Richfield Oil Co., cored approximately 40 feet of what was reported as rich looking oil sand in well No. 49 on Sec. 32, 26-21.

While drilling between 4856 and 4895 feet, two cores showed approximately 24 feet of oil sand that gave a rich acetone cut and reacted favorably to the tetrachloride test. It was further indicated that the oil sand was picked up about 175 feet below flowing water that has been one of the factors responsible for abandonment of previous deep tests in the Lost Hills field. However the 100 feet immediately above 4856 feet was found to be a sticky shale that is expected to afford a suitable place for the cement job.

Latest reports stated the well was standing cemented with a string of 9 5/8-inch run to 4855 feet. With a high gas pressure recorded much is expected of this latest addition to California oil reserves. Its importance will be doubled if the discovered sand proves to be the Temblor, that is the source of oil found in the Kettleman Hills and North Belridge pools.

The well's log would place the Temblor zone several hundred feet higher than in the nearby North Belridge play and over 2000 feet higher than the productive zone at Kettleman Hills.

Shallow production—750 to 1200 feet—has been obtained for several years in the Lost Hills field. Although half hearted attempts have been made to find lower producing

levels by deepening the shallow projects, they have had to be suspended because of excessive amounts of flowing water. Two such tests, drilled by George F. Getty to about 2000 feet, will be drilled to the new sand with the aid of heavier equipment.

Universal's new discovery is located approximately six miles north and east of Richfield's deep test in the North Belridge field. This well, the Belridge No. 1, is in line for a production test within a week or ten days. The crew was drilling out the feet of good oil sand cored above cement plug below 5580 feet as the week closed, with over 200 feet of good oil sand cored above the bottom at 5803 feet.

In the extreme southeast end of "the Valley" J. J. Richie, an independent operator, was drilling out the cement on a purely wildcat test that was reported to have developed excellent showings. Located on the boundary of the Trejon ranch, a large unexploited tract, the test was cemented at 4712 feet with the bottom at 4920 feet.

A heavy gas pressure has caused operators to install blowout prevention equipment and other heavy surface fittings to prevent a mishap.

A new burst of production was reported from Superior Oil Co.'s Huffman 1, extension well in the Kettleman Hills pool. During the week the daily rate of flow built up to in excess of 15,000 barrels from a depth of 8324 feet.

Apparently because it is flowing from below the gas zone, the Huffman has a much better gas-oil ratio than other producers on the North Dome, which were bottomed much higher on the structure. Superior's well is reported to have a ratio of about 5000 cubic feet per barrel of oil compared to over 25,000 cubic feet per barrel from the others.

On the coast across the Coast Range from this San Joaquin Valley development, Bolsa Chica Oil Corp. was coming out of the hole with a core that is expected to determine the commercial productiveness of Permit 191, an extension of the Elwood tidelands. This hole is bottomed at 3609 feet and previous indications favored discovery of the Vaquerous, productive formation of the Elwood play.

Remote Control on Oklahoma City Well

NIGHT was near as three men started opening the Hall & Briscoe No. 1 Mueller well to production. This sleeping giant of the Oklahoma City field soon wakened and the roar of the gas passing through the separators and going into the air through four risers some distance from the well made any conversation except the loudest yell inaudible.

The large wheel which the men are turning is the remote control common to the big wells of the field. A long piece of tubing from the hub of the wheel to the master gate enables the crew to open and close the well without getting into an unsafe position near the well. Look closely, between the man on the left and the rim of the wheel, and you will see another wheel much nearer the well. This controls the top gate, which is opened first.

Although daily production from Playa del Rey reached a new peak of 44,460 barrels late in the week, a survey indicated there were only 85 active drillers in various stages of completion.

After another week of hard work, Niel Anderson, umpire of del Rey, said he had almost won over to the proration program three of the 11 operators who have refused to curtail their production. Although nearly 80 per cent of the operators have agreed to come in on a proration scheme, only 75 per cent of the production would be under control since these refractory operators have a combined output in excess of 11,000 barrels per day.

It is expected less resistance would be offered to proration if the major purchasing companies could see their way to post a price for Playa del Rey crude. Small refiners continue to buy this sulfurous oil at ridiculously low prices and truck it out of the field to their plants where it is instrumental in weakening the domestic retail gasoline market.

A wildcat test near Culver City in the Los Angeles Basin is drilling below 2550 feet in brown shale. The well, being drilled by Taylor Oil Co. is coring as it goes and has already reported slight showings. However the important part of these showings is that they indicate the well may be on an extension of the Inglewood-Baldwin Hills structure.

LOS ANGELES—Some 200 oil companies on the Pacific Coast have protested an ordinance proposed by the Los Angeles City Council to govern the Playa del Rey field. This ordinance provides that a tax of 1 per cent be placed on the gross annual receipts of all operators doing business in the city.

OXWELDING FOR PERMANENCE

A LEADING pipe line superintendent says: "We keep our welders busy all the time. When not putting in new lines, which are, of course, all welded, we are digging up old style lines and welding them. Our welded lines are the only ones that are permanently leak-proof."

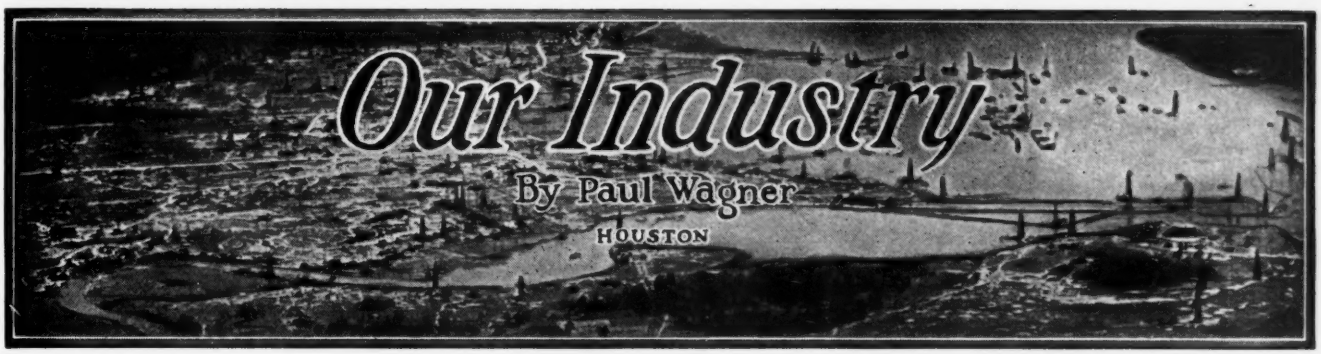
Oxwelding has won the confidence of oil and gas line operators everywhere because, once tested, oxwelded lines need no further inspection. Oxwelded joints are stronger than the pipe itself.

THE LINDE AIR PRODUCTS COMPANY, THE PREST-O-LITE COMPANY, INC.
OXWELD ACETYLENE COMPANY, UNION CARBIDE SALES COMPANY,

Units of UNION CARBIDE AND CARBON CORPORATION

General Offices . . . . . New York UCC **Sales Offices . . . in the Principal Cities**

65 Linde plants . . . 48 Prest-O-Lite plants . . . 174 Oxygen Warehouse stocks . . . 156 Acetylene Warehouse stocks
42 Apparatus Warehouse stocks . . . 245 Union Carbide Warehouse stocks



SINCLAIR OIL & GAS CO.'S Arkansas, Louisiana and Texas operations outside the Gulf Coast hereafter will be handled through the Tulsa office instead of through Fort Worth. In the readjustment, which includes closing of the North Texas production offices, Mel Shugert has been transferred to Tulsa and H. L. Hensel to St. Louis, Okla. No change has been made in the Gulf Coastal region of Texas and Louisiana, operated under H. A. King, vice president.

* * *

John L. Lamkin, independent oil operator, has returned to Fort Worth after a business trip to Houston early in December.

* * *

Frank E. Poulsen of the Texas division geological department of the Pure Oil Co., is again located at Tyler, East Texas. He had been recently doing special work for the southwestern producing division, with Tulsa headquarters.

* * *

W. F. Ivers, formerly of the Dallas Power & Light Co., has been named general manager of the New Braunfels division of the United Gas System, covering activities of the Southwest Distributing Co., and the Southern Gas Utilities, Inc. Mr. Ivers announces acquisition by the Southwest Distributing Co. of the Live Oaks Gas Co., serving the central south Texas towns of Pleasanton and North Pleasanton. Sam Ricks will continue as manager of the Live Oaks subsidiary.

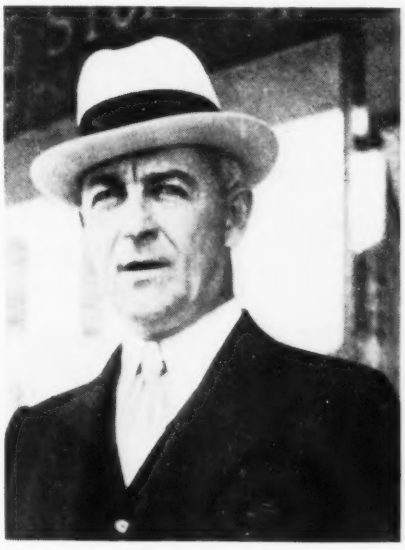
* * *

J. M. Rust, assistant treasurer of Union Oil Co. of California, Los Angeles, has been elected to the board of directors of the National Association of Credit Men.

J. F. Whitley, Jr., is now chief chemist of the Louisiana Oil Refining Corp., Shreveport, succeeding W. S. Guilford, who has joined the teaching staff of Loyola University, New Orleans. Mr. Whitley is a graduate of Louisiana State University at Baton Rouge.

* * *

The Petroleum Society of the Texas Agricultural & Mechanical College, supervised by Professor J. B. Joyce, has elected W. B. Powers as president; T. S. Austin, vice president; T. E. Patrick, secretary-treasurer. A program committee of three consists of M. R. Hayes, H. Pennington and M. Fields. Thomas Pennington is club correspondent.



Mel Shugert

Fred M. Lege, Jr., formerly president of the Magnolia Gas Co., and now a member of the Magnolia Petroleum Co.'s board of directors, has assumed the position of director of sales promotion at Dallas headquarters.

Ralph H. Cummins and Walter R. Berger, formerly of the Southland Royalty Co., in north and west Texas, have opened independent offices in the Fort Worth National Bank building at Fort Worth. They will act as appraisal engineers, specializing in oil and gas properties. Mr. Berger is widely known as a geologist.

* * *

J. C. Axelson, president, and L. F. Merrill, chief engineer, of the J. C. Axelson Manufacturing Co., Ltd., Los Angeles, visited Mid-Continent and southwestern oil territories before their return to the Pacific Coast from the American Petroleum Institute meeting at Chicago.

* * *

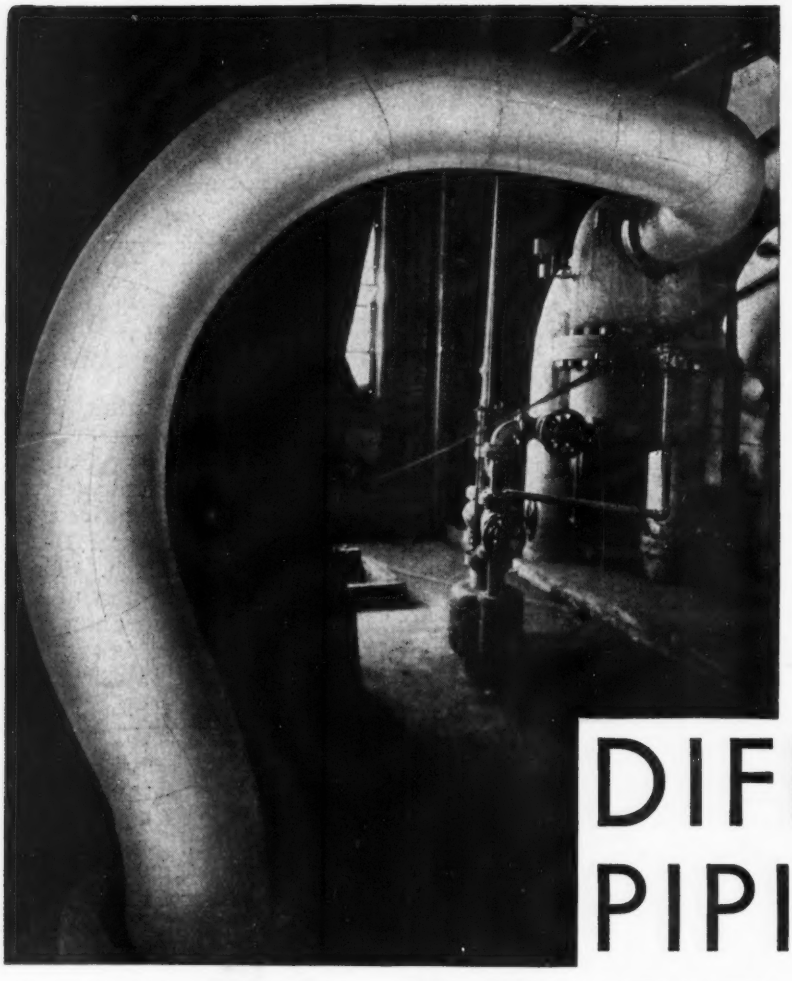
D. R. Downer of Shreveport is representing the Gulf Refining Co. of Louisiana at Jackson, Miss., where he is engaged in land department work for an indefinite period.

* * *

New officers of the Houston Geological Society include Dr. J. Brian Eby, Gulf Coastal division geologist of the Shell Petroleum Corp., as president; Miss Alva Christine Ellisor, paleontologist of the Humble Oil & Refining Co., vice president; and John F. Weinzierl, consulting geologist, secretary-treasurer. Dr. Eby succeeded George Sawtelle, vice president and general manager of Kirby Petroleum Co.

* * *

Fred P. Shayes is now in charge of the United Gas System's South Texas geological division, with Beeville headquarters. He was formerly with Houston Oil Co. of Texas, specializing in territory west of the Brazos river to the Rio Grande, where he will continue active under his changed position.



Complete piping in the new A. E. Staley power plant at Decatur, Illinois, was furnished by Limbert

DIFFICULT PIPING MADE TO FIT

Limbert facilities for doing the hard jobs in high pressure, high temperature piping and fittings are unequalled. Every type of high pressure joint is in regular production. Facilities for any fitting, cast or welded, are at hand. The most difficult types of bends and welded work are regular jobs for Limbert.

Limbert engineers will gladly assist you in the design and specification of your difficult piping. They can give you the benefit of a third of a century of pipe fabricating experience. They have a background of installations made in refineries and power plants the world over. You can depend on Limbert to handle your hardest job in a way that will save time and installation expense.

Use Limbert to manufacture ordinary requirements, or to design and manufacture special piping for any refinery condition.

GEO. B. LIMBERT & CO.

570 Fulton Street, Chicago, Illinois

Works: East Chicago, Ind.

St. Louis Kansas City, Mo.

Detroit, Mich.

LIMBERT PIPING

ADVERTISING PAGES REMOVED

Shallow Water Wells in Old River Bed Give Oklahoma City New Supply

By William F. Lowe
N. P. N. STAFF WRITER

OKLAHOMA CITY

IT TAKES water to make an oil field. This statement is not a mere paradox such as Ripley is prone to illustrate, but a stone cold fact that is ever present in the minds of oil field engineers. Drilling progress depends on the water supply. In every pool this is the first problem to be solved. At Oklahoma City the solution was comparatively simple considering the fact that streams run close to the pool, but even these could not be depended upon entirely. Like most rivers in the southwest they go dry during part of the year.

Due to this fact the operators in the field have been forced to seek other sources of supply. The Indian Territory Illuminating Oil Co., has been unusually successful in this search and is now in a position to supply all of its drilling wells with water obtained from water wells alone. The location of these wells and their operation is an interesting story.

In anticipation of the need for water, E. J. Klopfenstein, company engineer, was assigned the problem of finding it. Shallow test holes were drilled with a spudder in and near the field, but without finding a productive sand of sufficient thickness for development. After a detailed study of the geology of the area, with particular reference to the drainage, a test was made on the extreme northeast edge of the pool, in 36-12-3W. At a depth of 50 feet a large supply of water was found in a sand which has proven to vary in thickness from 18 to 30 feet.

The very loose, gravel like character of the sand points to its having been at one time an old river bed. This was probably the north fork of the Canadian, for its present meanderings indicate that it formerly took a more direct course across the area. The sand is very coarse and lies immediately on top of the red beds.

Five wells were sunk in the northwest quarter of the section by the use of an orange peel bucket. The upper 12 to 15 feet of the hole was cased with 44-inch pipe which was made of ¼-inch boiler plate. All plates and joints were riveted. Inside this caisson, from 25 to 30 feet of 42-inch pipe was run. The hole was finished with a string of 38-inch to the top of the red beds, the average depth being 50 feet.

The water string consisted of 18-inch casing which was run with a 20-foot, slot perforated joint on the bottom, and rested on the red beds. This pipe is light weight, and copper treated to resist rust.

Following the seating of the water string, the space between it and the outer pipe was filled with screened gravel. The larger pipe was then pulled, while the gravel, packing against the sides of the hole, preserved the walls. In place of the 42-inch boiler plate at the top of the hole, a 15-foot caisson of galvanized, corrugated culvert pipe was set. This pipe was 42 inches in diameter and is used to prevent the caving of the surface quicksand.

The water head of the wells is about 40 feet so they do not flow. Byron-Jackson and Pamona centrifugal pumps, capable of handling from 550 to 600 gallons per minute, are used in producing the water. These pumps are of the vertical, marsh or turbine types. They are driven by 440-volt, three-phase, 60-cycle, 15-horsepower motors and operate at 1750 revolutions per minute. Each well is thought to be cap-

Fig. 1—Photo of central water plant of Indian Territory Illuminating Oil Co., with one of the new shallow wells in the right foreground. The plant is located in the extreme northeast corner of the Oklahoma City pool

Fig. 2—Individual well hook-up in a camp installation. The water level gauge on the top of the tank at the left controls the automatic action of the pump. The latter, with the water purifier, is located in the small house in the right foreground

able of producing around 20,000 barrels per day, which makes an estimated total of 100,000 barrels available from the five wells already on production.

The water from this group of wells is pumped to the central plant shown in Fig. 1. Here it is boosted into the 16-inch field gathering lines by two Gould centrifugal pumps. Each of the latter has a 6000-gallon per minute capacity and are operated by 200-horsepower motors to which they are hooked direct. As the system now stands it is ample for all present needs and further recourse to the river will not be necessary.

The quality of the water is not as commendable as its volume. It carries 25 grains of hardness as against 19 grains for the river water, and this fact necessitates its being treated for boiler use. Though clear and cold, it has not been used for drinking purposes even though several tests have proven it to be free of contamination.

The water used in the 15 camps of this company in the Oklahoma City pool, comes from individual wells drilled on each camp site. These wells are slightly deeper than those in the old river bed and the water coming from them is better for domestic use. They are produced with pumps which range in capacity from 300 to 700 gallons per hour depending on the needs of the camp in which they are situated. The strokes vary from 12 to 16 inches. All of the pumps are belt driven from small motors and their action is automatically controlled by the water level in the tanks. See Fig. 2.

For additional assurance that the drinking water entering the homes of employees may be uncontaminated, chlorinators are installed at each of the camp wells. They are of sufficient size to care for all the water that is handled and are so constructed that they operate with the maximum efficiency. Though they function automatically, they are carefully inspected at frequent intervals.

Regardless of the care used in the operation of these purifiers there is a slight change in the taste of the water. Users may become accustomed to it in a short time though every effort has been made to have it boiled before it is used for drinking purposes. Chlorine is one of the most volatile of elements and can be driven off with even a little warming. However, most employees prefer to accustom themselves to the change in taste rather than to go to the trouble of ridding the water of it.

Oxweld Acetylene Co., 30 E. 42nd St., New York, has introduced a cutting attachment and adaptor for its type W-17 welding blowpipe, permitting the blowpipe to do almost any type of work which may be required of an oxy-acetylene blowpipe.

The cutting attachment enables the blowpipe to do a reasonably wide range of cutting work and differs from other similar attachments in that a long handle for operating the cutting oxygen valve is used. When the handle is not in use it can be pulled forward parallel to the tubes so that the whole attachment may be carried around in the operator's pocket.

The adaptor makes it possible to use any of the welding heads available for the Oxweld W-15 sheet metal welding blowpipe with the Type W-17 welding blowpipe handle. It contains passages for the oxygen and acetylene which fit tightly against the passages in the blowpipe handle.

New Books

A PETROLEUM Engineering Handbook has been published by the Petroleum World, 1031 South Broadway, Los Angeles, which seeks to present the latest technical developments in the California petroleum industry. Twenty-two petroleum engineers have contributed articles to the first edition.

Subjects covered include geology and airplane mapping, well spacing, casing programs, various phases of drilling, well completion practice, lease handling including pumping and repressuring, handling and transporting oil and gas, metering and natural gasoline plant design.

In one section of the book 29 normographic charts are given for the quick solution of frequent problems of the petroleum engineer. Price of the book is $5.

52 Weeks of Good Wishes

1. You — who read the "office copy" of National Petroleum News—treat yourself to "52 Weeks of Good Wishes" this coming year.

Have your own personal copy delivered at your home *each week*.

A "home copy" of National Petroleum News is a touch of luxury you will enjoy and profit from all during 1931.

2. You — who already enjoy the luxury of a "home copy"—remember your friends and associates in the oil business with "52 Weeks of Good Wishes." We will mail them Christmas card from here, signed with your name.

Thus, you dispose of your Christmas problem quickly and thoughtfully. Yes—profitably, for where can you get greater value for three dollars and a half than in fifty-two issues of NATIONAL PETROLEUM NEWS.

Send your order in *at once*, to avoid the usual holiday jam in the mails.

NATIONAL PETROLEUM NEWS,
852 Penton Bldg., Cleveland, Ohio

Send me "52 Weeks of Good Wishes" for which I enclose $3.50. (Foreign $5.)

NAME.....

St.-Box.....

City-State.....

Position.....

Send "52 Weeks of Good Wishes" *from me* to:

NAME.....

St.-Box.....

City-State.....

SIGN MY NAME:

.....

High Cost of Competitive Oil Field Drilling

THE financial statements of oil producing companies reflect the need for the changes in the industry's producing methods which are now beginning to come about through proration programs and unit development of new fields, James H. Westcott points out in his new fourth edition to his "Oil, Its Conservation and Waste." The book continues to be a soundly critical exposition of the general operations of the oil industry. The author is an investment analist in New York.

"Two matters stressed in this edition, the very large amount of frozen or wasted capital—estimated at $1,338,410,000 to Jan. 1, 1928—and the unnecessary and burdensome operating expenses—estimated at $274,455,000 in six years—caused through unintelligent and intensive drilling, should be of value to those who make our laws, who believe in the conservation of our natural and national resources, and capital investments and the rationalization of business; also to those who have the interest of the oil industry at heart," states the author in his foreword.

In a chapter entitled "Deficits and Waste of Capital Through Intensive Drilling," Mr. Westcott compares the financial status of oil producing corporations, on which statistics of income are available from internal revenue department sources, with farming corporations and with total corporations reporting for federal taxation purposes. The unfavorable showing of the oil producing corporations, the author states, was due to waste and loss through the highly competitive methods of developing oil pools.

For six years, from 1921 through 1927, except 1925 for which figures are not available, of total corporation reporting to the government, an average of 228,581 each year reported net income and 177,524 a deficit; of all farming corporations reporting 3577 reported net income and 4500; of all oil producing corporations reporting (not individual or copartnership returns) 1272 reported net income and 2313 a deficit.

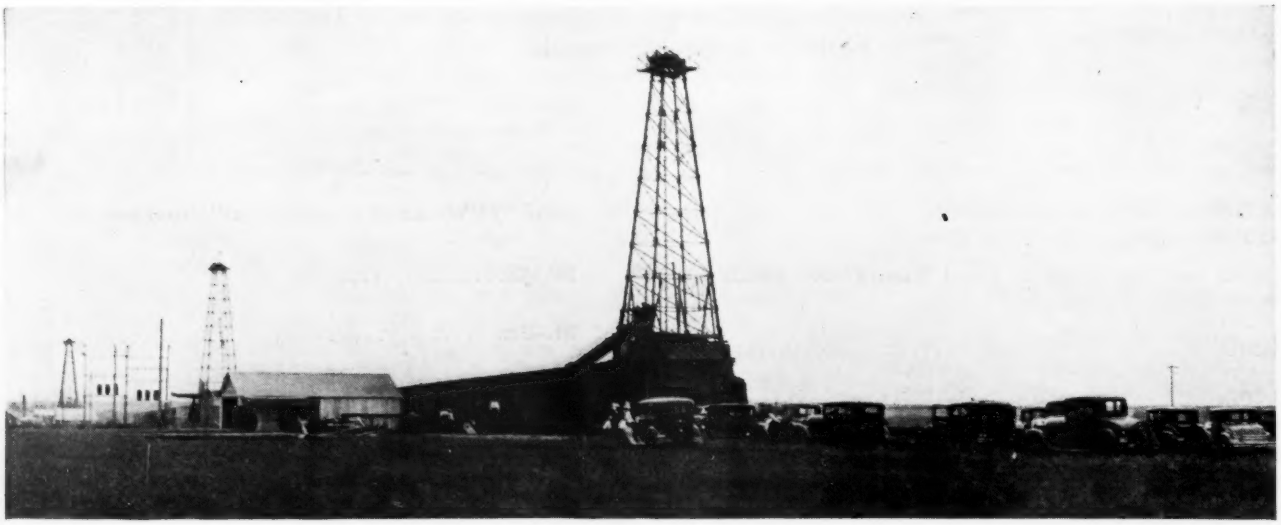
Marshalling his figures further, Mr. Westcott points out that, after federal taxes, for farming corporations there was a total deficit of $14,001,823 for these six years; while for a smaller number of oil producing corporations the total deficit was $273,776,919. The reason Mr. Westcott takes the farming corporations for comparison purposes is because the federal government has considered the condition of the farming industry sufficient to warrant attempts at federal aid of one kind or another.

During this same period the book brings out that only 35.8 cents a barrel would have had to be added to the prevailing prices of crude at the wells in order for the oil producing companies to have shown a net profit of 10 per cent before federal taxes on their operations. Cooperative development of oil fields would have brought that about, he believes.

As with former editions, the book includes a description of the various important cracking processes and other operating phases of the industry.

Columbian Steel Tank Co., Kansas City, Mo., has developed a new balanced valve thiefhole for oil field use, which, it claims, eliminates most of the faults of the old type device. This new thiefhole automatically opens under 2½ to 3 ounce inside pressure and provides a large air inlet with less than one-half ounce vacuum pressure.

The device is circular and the opening is 14 inches in diameter with a bucket shelf inside which permits the thief operator to take his samples inside the tank proper.



The Eastborough field, immediately outside the city limits of Wichita, Kans. It produces from the Chat formation and from the Wilcox horizon. The pool is causing city officials some concern, as it threatens to invade residential and business blocks. The well in the foreground is Vickers Petroleum Co. and Hinkle's No. 1 Keys, a 1,000-barrel well

ADVERTISING PAGES REMOVED

California Natural Gasoline Situation

By R. W. Garman*

PETROLEUM overproduction and remedial measures heretofore have for some time been topics of extreme interest. The manufacturing and sales phases have likewise been freely discussed. California natural gas production has also had its share of notoriety. Natural gasoline, however, has rarely come into marked notice, possibly because it is so closely allied with oil and gas production.

General opinion is that natural gasoline production has the trend of natural gas production. It should be realized, however, that most of the natural gasoline fractions very likely exist in the oil pools as a liquid part of the oil and that the so-called dry gas is a carrying medium.

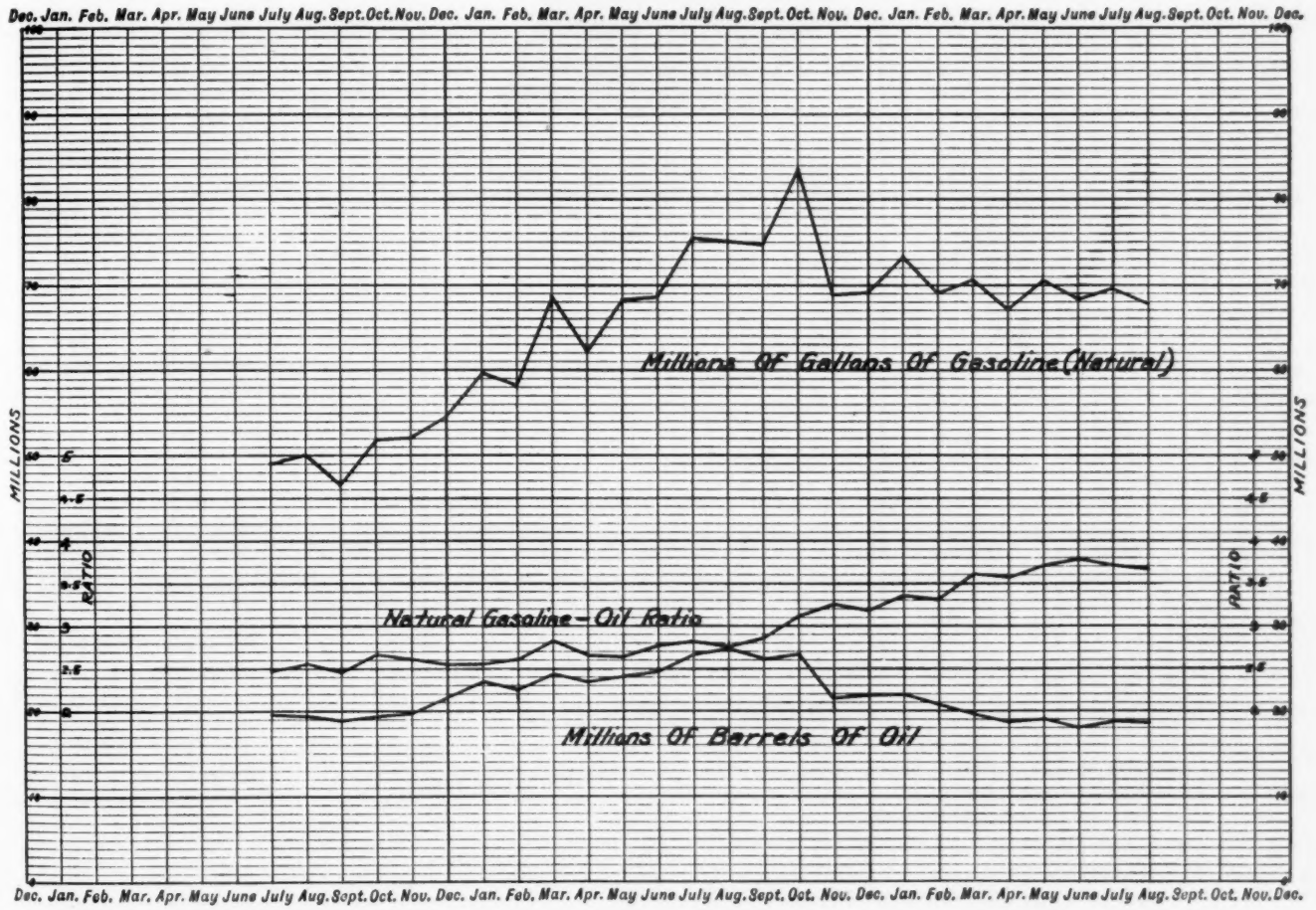
Natural gasoline will exist in natural gas production according to the quality and relative quantity of the oil with which it is in contact during its removal from the oil pool and according to the changing temperatures and pressures during such removal up to the point where the oil and gas are physically separated. In other words, the phenomenon of straight distillation as distinguished from fractional distillation occurs in every well and a number of factors besides the volume of gas affect the amount of natural gasoline contained in that gas.

Still other factors govern the amount of natural gasoline extracted from such gas, such as the possible economic limit of extraction plant capacity, the efficiency of extraction during the life of such extraction plants, and the specifications of the product.

In order to make an economic study of natural gasoline in California it is probably preferable to compare natural gasoline production to oil production, as shown in Fig. 1. The natural gasoline-oil ratio may prove interesting. In the middle of 1928 the available natur-

*Manager natural gasoline department, Union Oil Co. of California.

Production of Gasoline and Oil—State of California


Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
MILLIONS
RATIO
Millions Of Gallons Of Gasoline (Natural)
Natural Gasoline - Oil Ratio
Millions Of Barrels Of Oil
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Year of 1928
Year of 1929
Year of 1930

YOUR Christmas Greetings with a good book—is a thoughtful way of remembering your friends and associates at Christmas time.

We will enclose a Christmas card signed with your name. All you have to do is to send in the coupon.

If you don't find the book you wish below, write us at once. We have a complete list of the best books on the petroleum industry.

Send your order in at once to avoid the usual Holiday jam in the mails.

LUBRICATING OIL SALESMAN'S PRIMER

The "Lubricating Oil Salesman's Primer" is a new book by Claude Ettele, associated with one of the big oil companies in this country. The author's purpose is "to properly present a first view of the subject of lubrication and encourage the young salesman to study advanced works without which he will be unable to develop maximum efficiency in the services of his employers and of his customers."

The book takes up the manufacture of various lubricating oils and greases; tests by which oil and grease specifications are written; general discussion of lubrication problems in cylinders, turbines, internal combustion engines; power transmission machinery such as shafting; wire ropes; belts, gears, bearings, etc., driven machines such as air compressors, pneumatic tools, ice machinery, machine tools, textile machinery, paper mills, mine and quarry machinery.

"Lubricating Oil Salesman's Primer" also gives a standard line of lubricants, and specifies which oils or greases are applicable to the various kinds of machinery. This book is well worth its price of $3. Send for your copy today!

This is the complete story of "*Gasoline*" told in popular language, and written by an authority on the subject of its use in motor cars—T. A. Boyd, head of fuel oil section, General Motors Research Corp.

What gasoline is, where it comes from, its properties, what distinguishes good gasoline from bad, how the motorist can get more miles out of a gallon, and help in the economy of this important fuel—All these facts are given in chatty, non-technical style and profusely illustrated.

"*Gasoline*" is a message to the public that has so often been recommended to the oil industry. Every man engaged in the making and distributing of motor fuel should read it.

206 pages—popularly priced at $2.50.

ACCOUNTING for the PETROLEUM INDUSTRY

"Accounting for the Petroleum Industry" by D. F. Morland and R. W. McKee, is one of the most practical and comprehensive works on accounting principles and procedure for all branches of the oil industry—production, transportation and storage, refining, marketing.

Accounting for each branch is discussed separately; description of technical practices is given, and the accounting problem to be solved in each activity is set forth together with sample forms in use; tables for depreciation rates, etc.

For refinery accounting this book recommends the "weighted selling ratio method" which is described in detail and which has the advantage of determining for every product a cost which will allow for a reasonable profit when disposition is made thereof.

"Accounting for the Petroleum Industry" is carefully prepared and the most practical book written on the subject of accounting for the oil business.

304 pages—Price $4

Cut Out and Mail

National Petroleum News,
Room 703, 1213 West 3rd St., Cleveland, Ohio.

I want the books checked below. Enclosed is check or money order for $.....
(Add 15 cents for foreign postage)

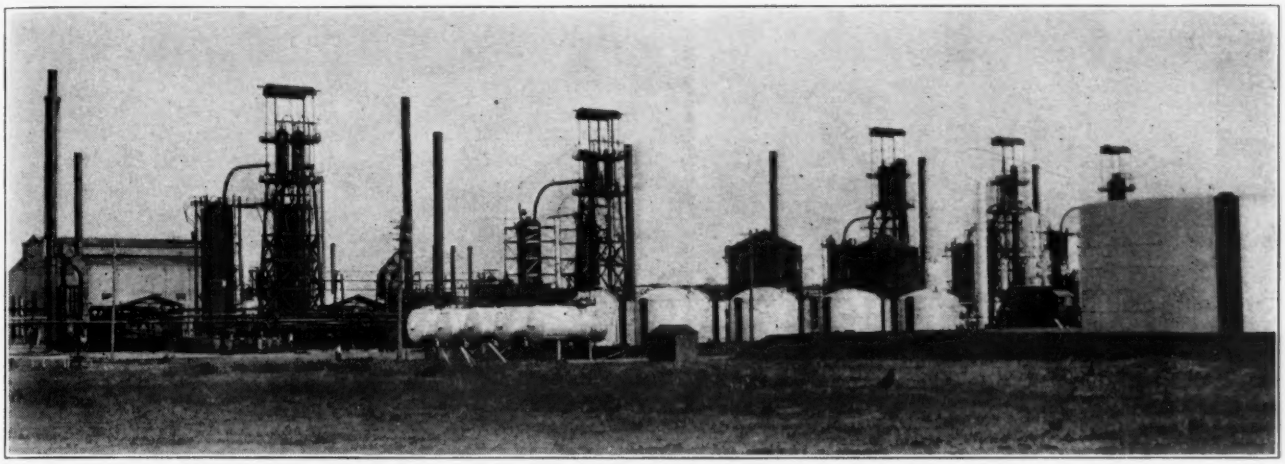
- ☐ *Lubricating Oil Salesman's Primer—$3*
- ☐ *Gasoline—$2.50*
- ☐ *Accounting for the Petroleum Industry—$4*

NAME.....

Address.....

.....

.....



Refinery of the Shell Petroleum Corp. at Arkansas City, Kan. Four Dubbs cracking stills are seen in the foreground, with a Braun stabilizer

al gasoline was about 2.5 gallons for each barrel of oil. Late in 1928 the combined effect of greater oil and gas production resulted in practically no change in the natural gasoline-oil ratio. However, early in 1929 the natural gasoline plant capacity was greatly increased and, although it was greatly overloaded, it still managed to increase the natural gasoline-oil ratio, due chiefly to the quality of the oil and the high gas-oil ratios. By October 1929 the natural gasoline-oil ratio had barely passed 3 gallons per barrel of oil.

Then the California curtailment program was started, the gasoline extraction plants were not so heavily overloaded, and the natural gasoline-oil ratio increased to about 3.25 gallons per barrel of oil. Early in 1930 the very high natural gasoline-oil ratio at Kettleman Hills began to have its effect and in July California's average natural gasoline-oil ratio increased to 3¾ gallons per barrel of oil. It is also probable that increasing extraction plant efficiency during the past year has aided in increasing the natural gasoline-oil ratio.

By October 1929 California's oil storage problem had become acute, but the November curtailment furnished a measure of relief. In October 1929 the natural gasoline situation was somewhat similar to that of oil. In view of the increasing natural gasoline-oil ratio, if there is an overproduction of oil at the present time, it would appear that there is an increasing overproduction of natural gasoline.

The average yield of straight run gasoline from California crude oil now being run in California is about 26 per cent. The refinery throughput is about 560,000 barrels per day. The net result is about 145,000 barrels of straight run gasoline per day. Cracked gasoline amounts to about 50,000 barrels per day, making a total of 195,000 barrels per day exclusive of natural gasoline.

Natural gasoline in turn amounts to about 50,000 barrels per day. In order to use this natural gasoline, a blend of slightly over 20 per cent would be necessary. Cargo shipments of all gasolines average about half of the total gasoline production. Since many of these cargoes have little or no natural gasoline, it is evident that other cargoes are almost entirely natural gasoline when it is noted that the storage of natural gasoline remains fairly constant at close to 2,000,000 barrels.

Over two years ago so-called stabilization came into general use. Using Engler recovery as an index of quality, most natural gasoline was soon 90 per cent. During the past year the trend has been higher and higher up to a maximum of 96 per cent. Recently a Reid vapor pressure as low as 22 pounds absolute at 100 F. has been used to a limited extent instead of Engler recovery. It happens that such natural gasoline would have an Engler recovery of about 97.5 per cent, but not all natural gasoline of such recovery would have such a low vapor pressure.

A number of contracts for purchase and sale have recently been made which provide for payment on the basis of the liquid volume of normal butane and heavier constituents contained in the natural gasoline delivered and accepted, determination to be made from fundamental analysis, normal butane being limited to 25 per cent of the stable natural gasoline. The Reid vapor pressure of such stable natural gasoline would usually be somewhat less than 22 pounds absolute at 100 F.

California natural gasoline of 90 per cent Engler recovery may have as much as 1 per cent propane and from 4 to 8 per cent isobutane and in some cases more than 25 per cent of normal butane. This type of contract was originated for the same purpose as those specifying high Engler recovery or low Reid vapor pressure, that is, overproduction of natural gasoline necessitates specifications such that greater use of natural gasoline may be encouraged.

In California it happens that by far the greatest part of the natural gasoline production is shipped by pipeline and the particular type of contract under discussion here was for the purpose of permitting central fractionation by the refiner purchaser so that the manufacturer seller could continue to deliver his present grade of natural gasoline if he chose to do so.

It should be realized that the

You don't need to put in one type of cracking still for heavy stock and another for light, any more than you have to cut holes in the barn door for the mother cat and each kitten

The same Dubbs unit will handle every kind of oil, from heavy "non-refinable" crude to kerosene distillate

Dubbs cracking of Pennsylvania gas oil will yield 70 per cent gasoline of 60 per cent benzol equivalent

Dubbs licensees in Pennsylvania can get above 70 per cent

of gasoline from their paraffinic kerosene—gasoline of 60 per cent benzol equivalent

Dubbs cracking in Mexico is getting 64 per cent gasoline of 60 per cent benzol equivalent from naphthenic kerosene

These results are accomplished at moderate temperature and pressure

Any Dubbs unit cracks any kind of oil anywhere

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

OCECO TANK FITTINGS
assure Maximum Protection at Minimum Cost

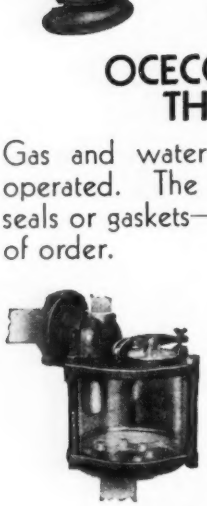
To completely equip a large tank with all necessary OCECO Fittings costs but a fraction of the value of tank and contents.

OCECO CONSERVATION VENT VALVE and OCECO FLAME ARRESTOR

Fire hazard is eliminated and evaporation losses kept to an irreducible minimum on well built tanks equipped with OCECO Fittings.

OCECO GAUGE and THIEF HATCH

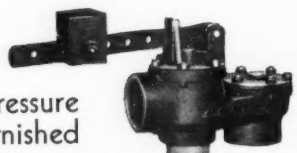
Gas and water tight, non-sparking, foot-operated. The OCECO uses no liquid seals or gaskets—contains nothing to get out of order.



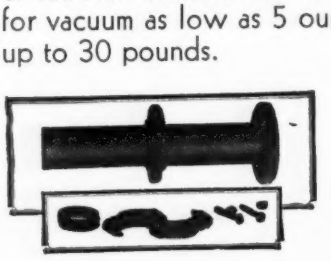
OCECO LOOK BOXES

The tough Pyrex glass of cylindrical shape gives maximum strength and allows light to enter from all sides. Five-inch, gas-tight hand hole on top; bottom casting tapped for sample cock.

OCECO STILL SAFETY VALVE



Provides for the relief of excessive pressure or vacuum within the still. Valves furnished for vacuum as low as 5 ounces and pressures up to 30 pounds.



OCECO TWO BOLT PIPE COUPLINGS

For hot or cold liquids or gases. Saves time and labor.

Other OCECO PRODUCTS include:

Bubble Towers
Bubble Caps and Trays
Automatic Tank Gauges
Roof Manheads
Gauge Wells
Safety Tank Winches
Cable Sheave Brackets
Swing Joints
Steel Tank Nozzles
Tank Cleaners
Tank Gauges
Oceco Fire Extinguishers
Automatic Tar Plugs
Etc.

THE OIL CONSERVATION ENGINEERING COMPANY

877 Addison Road — Cleveland, Ohio

removal of isobutane without losing a material percentage of normal butane requires much more elaborate fractionation than has been California practice in the past. As a matter of interest it may be noted that one manufacturer, who very recently constructed an extraction plant and sold his output under such a contract, chose to install elaborate fractionation and he has made some deliveries of natural gasoline containing isobutane and lighter constituents to the extent of less than 1 per cent but yet containing almost all the normal butane permissible. Such natural gasoline at 70 F. has a Reid vapor pressure less than atmospheric pressure.

Until the early part of 1929 most of the natural gasoline prices in California were based on posted service station price of commercial gasoline at Los Angeles or San Francisco. The differential below such base ranged from 3 to 11 cents, so that the actual price per gallon at that time ranged from 8½ to 15 cents. The higher prices were on three year contracts which were approaching termination.

Early in 1929 the posted service station price more or less disappeared. Since that time the posted tank wagon price of commercial gasoline has been used as a base to a considerable extent, but flat prices also were used. During unsettled market conditions it is obvious that neither method had any great merit, when it is noted that California custom has been toward long-term contracts for purchase and sale of natural gasoline, that is, for periods from one to five years.

Recently a number of contracts have been made with the stipulation that the price paid to lessors be the one used. This price might be described as a more or less unofficial posted price for natural gasoline. (Practically all California oil lease contracts specify the wholesale market price for natural gasoline at the time and place of production.) These recent purchase and sale contracts also specify that an officially posted price may be used, but no such price has as yet been officially posted. Present prices for natural gasoline vary from 5 to 7½ cents per gallon,

except on some of the older contracts which call for as high as 11 cents. Most of such contracts are near termination.

The major refining companies of California control either by purchasing on contract or producing fully 90 per cent of the total natural gasoline production. Independent refiners usually buy more than half of the remaining 10 per cent by contract. The result is that the spot market is represented usually by considerably less than 5 per cent of the total natural gasoline production. Spot prices therefore do not represent true values in California since they may be distress prices for either purchaser or seller.

At least 90 per cent of California's natural gasoline production is shipped to refiners by pipeline. This percentage includes pipeline shipments from Kettleman Hills to ship-loading facilities about 90 miles distant. Of that natural gasoline not shipped by pipeline or pipeline and boat, insulated trucks and insulated tank cars handle about equal amounts. Natural gasoline produced at Kettleman Hills is at present shipped through two pipelines, one of which also transports crude oil by dispatching.

The natural gasoline-oil ratio at Kettleman Hills may be particularly interesting when it is contrasted with the general ratio. Late in August seven wells were producing about 15,250 barrels of oil and they furnished gas to extraction plants which manufactured 520,000 gallons, the resultant ratio being over 34 gallons per barrel of oil. Kettleman Hills is already furnishing about 22 per cent of the total California natural gasoline production. The need of conservation from a natural gasoline viewpoint would seem to deserve attention.

Uehling Instrument Co., Paterson, N. J., has developed a "self-contact" potentiometer pyrometer for measuring high temperatures. It eliminates use of depressor bars, cam mechanisms and continuously operating motors, the company says, assuring definite and reliable contact between the needle of a galvanometer and stationary contact pieces.

Hybnickel

HEAT AND ACID RESISTING CASTINGS

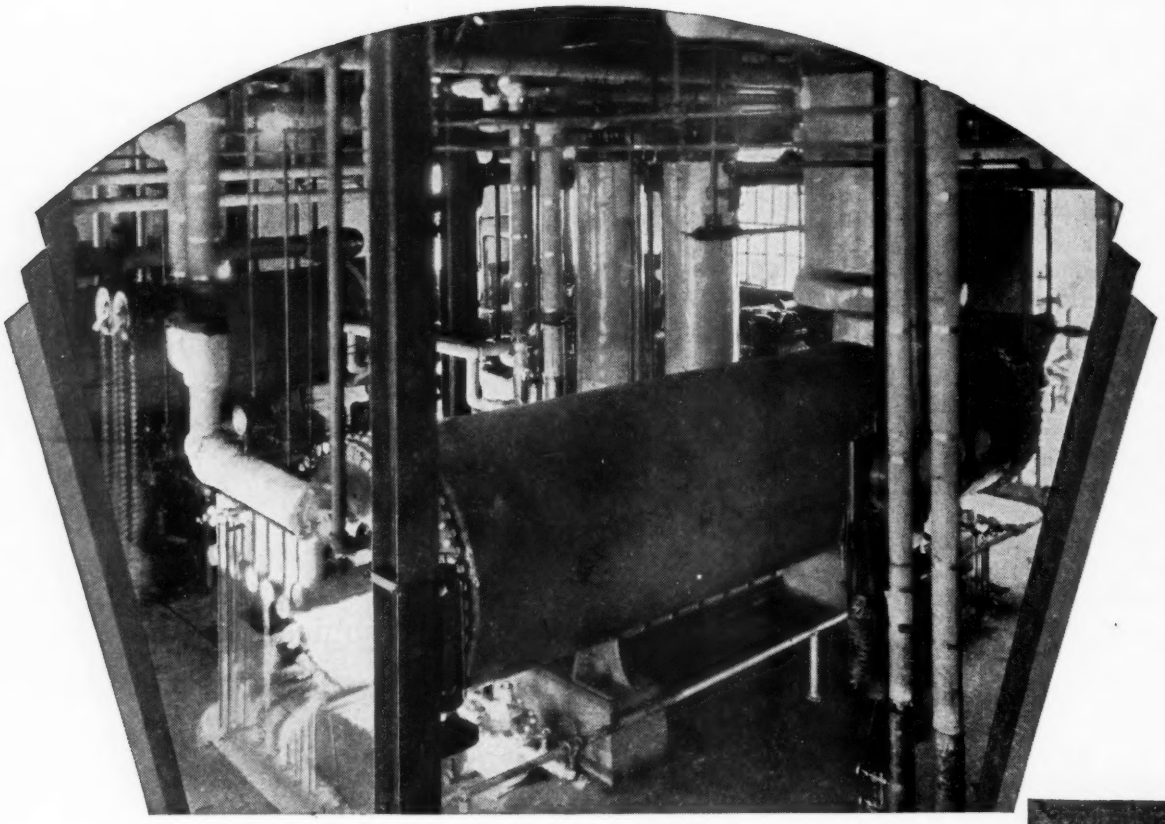
Several hundred tons of Hybnickel are now in use in oil refinery stills and superheaters.

One of Our Main Products Is—
Heat-resisting supports for Oil Stills.

HYBNICKEL ALLOYS COMPANY
Successors to Victor Hybinette
c/o The Pusey and Jones Corporation
Wilmington, Delaware

VAPOR PHASE REFINING
WILL
Increase your gasoline yields,
Improve your gasoline quality,
and
Reduce your refining costs.

THE GRAY PROCESSES CORPORATION
961-975 Frelinghuysen Avenue
NEWARK, NEW JERSEY



ALWAYS abreast *of refining demands*

STEP by step as temperatures dropped, Carbondale met the need,—20°,—30°,—40°, and lower when necessary, but with full brine capacity always. Carbondale Refrigerating Systems have led the way.

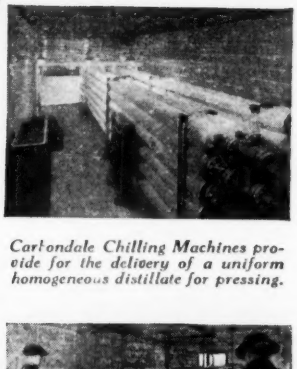
On a cost of production basis plus an assurance of dependability that continues year after year, makers of America's finest lubricating oils have chosen Carbondale refrigerating and refinery machinery. Thirty years of practically continuous use has been recorded by Carbondale installation—and they are good for many more.

To those who are seeking lower temperatures, better heat transfer or increased capacity, Carbondale offers the cooperation of its refinery engineers.

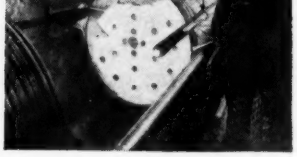
THE CARBONDALE MACHINE COMPANY
CARBONDALE, PA. ***Branches in principal cities***

Carbondale Refrigeration *for Refiners*

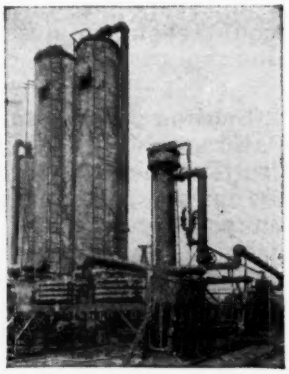
CARMACO



Carbondale Chilling Machines provide for the delivery of a uniform homogeneous distillate for pressing.



Carbondale Filter Presses and Filter Press Blankets.



Carbondale Heat Exchanger installation.

Visiting Around the Refineries

By Arch L. Foster

THE Hydrogenation plant of the A. G. fur Steinkohleverflussigung und Veredlung, at Duisburg, Germany, has recently been shut down for the second time since it began commercial operations in June, 1929. The first shutdown occurred less than a month after the start of operation, on account of an explosion.

The reason for this second shutdown is announced by company officials as being for the purpose of making rather radical changes in the process, and to install more suitable apparatus to work at the high pressures and temperatures necessary for proper operation of the process. Hydrogenation of low-grade slack coal, on which this plant has been operating, apparently has not yet reached an entirely successful stage in commercial practice, and the company has found it necessary to change the method considerably.

It is announced that the plant will reopen as soon as equipment of improved design has been installed. Whether or not the raw material to be used after resumption of operations will be coal or coal products, or if the company will follow the practice of the German dye trust (I. G. Farbenindustrie A. G.), is not yet known. The dye trust has been producing synthetic motor fuel at the rate of 100,000 metric tons per year, by hydrogenating lignite tar, it is stated. A brief discussion of their process was published in NATIONAL PETROLEUM NEWS for Aug. 13, 1930, page 27.

The Duisburg plant, it was announced when it was first started in operation, had a capacity of 30,000 metric tons of motor fuel per annum, but it is understood it has never been able to produce at this rate.

* * *

RUMOR has it that there is a possibility of interference between the hydrogenation patents held by the Hydro Patents Corp., subsidiary of Standard Oil Co. of New Jersey, and those held by the Chemical Foundation Inc., of New York City. It will be recalled that the latter company was formed to take care of patents and processes held or operated in this country by enemy aliens at the time of the entrance of the United States into the World war in 1917.

Just what action may be taken by the two organizations interested in these patents is not now known, but it seems probable, if there is a likelihood of an overlapping of claims between these two sets of patents, some investigation will be made to discover the nature of the grounds for contention. According to a statement purporting to emanate from Francis P. Garvan, president of Chemical Foundation, the following numbered patents cover the basic process for hydrogenation, all of which were originally issued to Friedrich Bergius and associates:

No. 1,344,671, for obtaining light hydrocarbons from heavy hydrocarbons.

No. 1,391,664, hydrogenating carbon compounds under high pressures and temperatures.

No. 1,342,790, hydrogenating carbon compounds.

No. 1,251,954, producing liquid organic combinations from hard coal, etc.

* * *

A REPORT of the amount of foam powder in storage in the various refinery districts should be made in the near future by the Fire-Marshal's Division of the National Petroleum Association, according to the belief expressed in a letter by R. A. Wotowich, trustee-in-charge of the Department of Fire Prevention and Safety, of that organization. An estimate of the amount of foam which should be kept on hand in these different districts should also be made, by each fire marshal's group, the trustee says.

Mr. Wotowich referred to a recent disaster on the Atlantic coast, in support of his statements. A dock and refinery fire started in an eastern plant, and large quantities of foam powder was shipped by rail for a considerable distance, to aid in fighting the fire, before the latter could be brought under control.

The trustee requested that each group act promptly, and send in its report and estimate to Fayette B. Dow in time for presentation at the December meeting of the board of trustees.

* * *

THE Standard Oil Co. of New York has recently placed in service several test cars in New York State and in New England, for studying the operation of cars with different types of fuels and lubricants under the driving conditions found in these localities.

These cars are equipped with a multiplicity of registering, indicating and testing devices for conducting tests during operation of the car on the road.

An instrument board faces the rear seat, and an operator sits facing this board. The board supports instruments for recording and indicating the speed of the engine and the car. Another shows the temperature of the cooling water in the cylinder jacket.

An Orsat apparatus for testing exhaust gases is fastened to the inside of the car alongside the rear seat, and on the rear door a group of gas bulbs is assembled, permitting the taking of exhaust gas samples at any time during the run, for analysis in the Orsat.

The car is equipped with four tanks for different samples of motor fuel, any of which may be connected with the carburetor of the engine by the throwing of a switch, according to statements made. A complete record of each run of each car is made and the results are studied and analysed to determine the results of each test.

WE undertake the design and construction of Edeleanu plants ranging from 250 to 8000 bbls. daily capacity. Throughput, cost of labor and consumption of steam, power and sulphur dioxide guaranteed.

Fully protected by U.S. and foreign patents.

Used by leading refiners in U.S.A. and abroad.

For full information apply

EDELEANU COMPANY, LTD.

11 West 42nd Street
New York City

Modern Theory and Practice Combined In Rebuilding Swan-Finch Plant

By Arch L. Foster

N. P. N. STAFF WRITER

CLEVELAND

ONE of the most striking observations made by the oil man from other parts of the country in passing through the Pennsylvania refining districts, or in visiting refineries in that region is the very rapid expansion and modernization of the Pennsylvania refining plants during the last three years. At the present moment, there appears to be not a single active plant which has not already practically completed an ambitious rebuilding and expansion program, during this period, or is now passing through the throes of such a building process.

The Swan-Finch plant at Warren is one of the many which is now nearing the completion of its program of rejuvenation. This program has been carried out by H. S. Peterson, plant manager and I. L. Klein, superintendent, under the able technical direction of Dr. E. H. Leslie, who designed the new plant in the light of the most recent practice in plant design and operation.

As in many other instances among the smaller plants throughout the country, the entire job of installation, as well as the fabrication of practically all the apparatus and equipment employed, was accomplished by the plant personnel without outside aid, except in a few instances in installing special equipment, which were handled by the manufacturers of the apparatus.

The reconstruction of the plant so far consists in revamping the boiler house, with the addition of a Cochrana deaerator and feed water treater; a new bright stock plant, including mixing, heating and filtering equipment, and cold settling plant; new chilling plant; new clay revivifying plant as well as new tankage and numerous smaller additions of different types.

This plant has the advantage of having its crude supply literally in its front yard. In fact, it is difficult to say where the field stops and the refinery grounds begin, and refinery storage tanks continue to function surrounded more or less by pumping wells which have produced crude for several decades and bid fair to continue indefinitely in so doing.

Under present methods of operation, this crude is pumped from storage to shell stills fired with coal, where gasoline, naphtha, kerosine, gas oil or "fuel oil," light and heavy neutral fractions are successively removed. Steam is used in taking off the later cuts. The last still in the battery runs the residuum to process bottoms with steam, running to a temperature of 610 Fahr., producing a bottoms of 540-50 flash and Saybolt viscosity of 140-5 seconds at 210 Fahr.

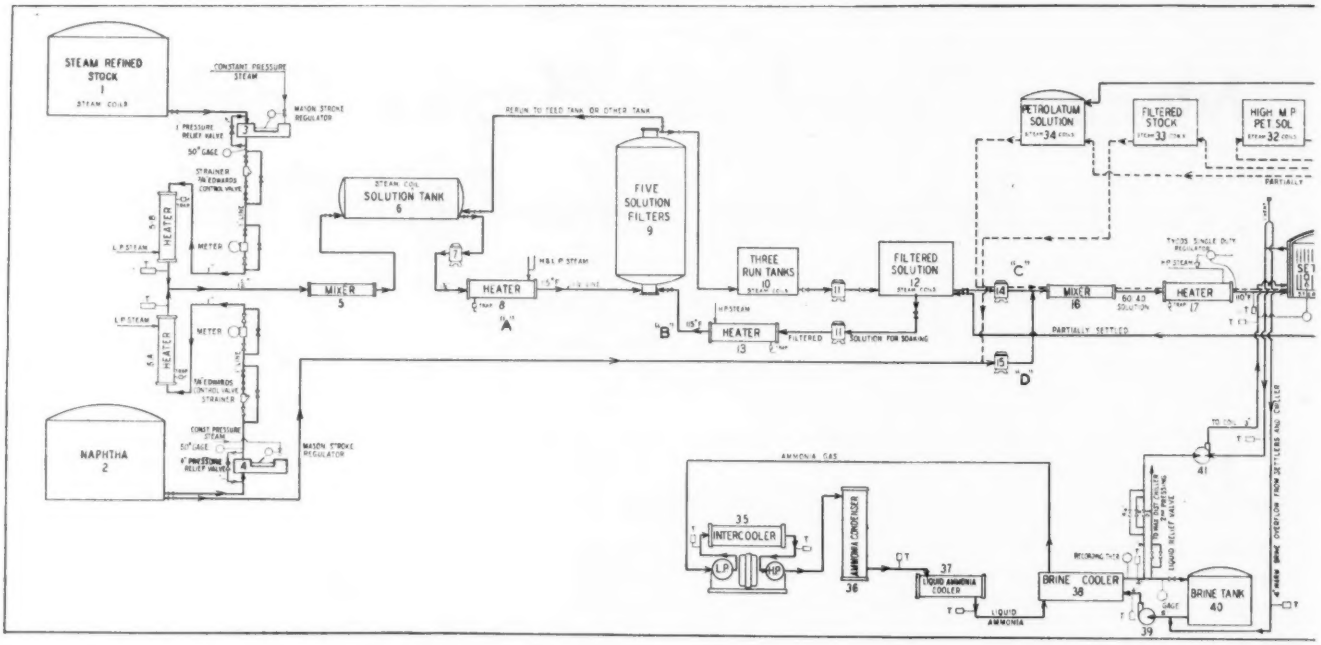
The bottoms are pumped to storage tanks near the bright stock plant, and as needed are again pumped to a stock tank just outside the solution house. A similar tank placed near the opposite end of the house contains the naphtha used for "cutting" the stock for filtering and settling. A diagrammatic arrangement of the entire plant is shown in Fig. 1.

TWO Dean reciprocating pumps controlled by Mason stroke regulators pick up stock and naphtha from their respective tanks and pump them into the solution plant. The stock passes through a strainer and both liquids pass through National indicating-recording meters to Struthers Wells tubular heaters. The liquids are preheated, before mixing, by exhaust steam, from the pumps, in the annular space between the two lines, to a temperature of approximately 110 Fahr. Pressure gauges and relief bypasses in these lines prevent building up excessive pressures, and the solution percentages are controlled by regulating the flow as indicated by the meters.

THE two streams after preheating meet at the tee and pass into an orifice mixer consisting of six steel plates with ½-inch orifices set at about one foot intervals in a six-inch pipe section, the whole having been made at the plant. The hot 50-50 mix is then passed into a horizontal tank, from which it is picked up by another Dean pump, controlled by a Mason speed regulator, and passes through a similar heater some 20 feet in length, in which both exhaust and live steam is used to further heat the solution.

The heated solution is next pumped to five cylindrical 10-ton filters, where it is filtered upward through earth of 30-60 mesh to about 8 N. P. A. color. From these filters the solution is picked up by another Mason-regulated 10x7x12 Dean pump, is passed through a strainer and meter as before and mixed with a sufficient volume of fresh naphtha to make a 65-35 solution, in a 16-foot by eight-inch orifice mixer. The mixer contains five orifice plates at about 16-inch intervals, with a 2½-inch orifices, staggered top and bottom from plate to plate. This solution again passes through a 16-foot tubular heater into which live steam is admitted, controlled by a Tycos thermostatic regulator.

All instruments in this plant



are air-actuated, air pressure being furnished by a Chicago Pneumatic Tool Co. 4-inch by 4-inch compressor, driven by a three H. P. Armor motor through a belt and idler, the air pressure in the tank being regulated automatically between 40 and 80 pounds.

From the 16-foot heater the 65-35 mix passes to the pair of cold settling tanks. These tanks are 20 feet diameter by 20 feet high, insulated with ten inches of "rock cork," and an outer layer of hollow tile. Each tank contains 4000 feet of 2-inch pipe in 10 stacks of forty 10-foot pipes, each stack fitted to a top and bottom header. Each tank is equipped with Tycos housed mercury thermometers for indicating brine and oil temperatures to and from the pumps, and a two-point Tycos recorder on each line registers the temperatures of each liquid. Brine is circulated through the chilling coils by centrifugal pumps driven by 7½ H. P. Armor motors. Cold brine under pressure is bled from the cold brine tank to the circulating pump, displacing a like quantity of warmer brine which overflows to the brine cooler.

The principles of crystallization of solids from solution are better understood now than they were a few years ago. Hardly a refiner of wax and paraffin products from petroleum but has become thoroughly acquainted with the difficulties of settling petroleum from solution, or the "grief" which comes from paraffin distillate improperly distilled or chilled in such manner that it is only with extreme difficulty that the mass can be pressed to yield desirable products of crude wax and pressed neutral stock. Much of this difficulty has arisen from a lack of knowledge of the physical laws governing the crystallization of the higher paraffins found in wax distillate and cylinder stock, as well as the physical properties which must be found in an easily pressable paraffin distillate. The science and art of chilling and settling has during recent years received careful attention from the best technologists in the industry, and studied in the light of what has been accomplished in other and older industries concerned with chilling and crystallization problems.

The formation of an "amorphous" mass of very small crystals enmeshed in a greater mass of socalled amorphous wax and oil has been one of the greatest problems in the handling of paraffin - containing fractions. This difficulty has been attacked usually at the stills, and the attempt has been made, with varying degrees of success, to eliminate the troublesome conditions by variation in the temperatures and distillation range of the "cut," by distilling at higher or lower temperatures with more or with less steam used.

Other attempts have been made to eradicate the drawbacks, and to obtain a fraction of the desired characteristics by chemical or physical treatment in addition to manipulation of the distillation conditions. Apparently comparatively few have given serious consideration to the details of the chilling operation and their effect on the product and its workability, until recent years. And of the work that has been done, the beneficial results that have been attained, comparatively little of real value has found its way into the literature and into common practice. It is particularly in handling wax-bearing fractions from Mid-Continent and similar so called "mixed base" at all confined to this type of crude.

The chilling and settling plants in this refinery were designed to take advantage of what has been learned regarding crystallization not only in petroleum refining but by other industries such as sugar refining, in which the art of crystallization has been developed to a high degree of efficiency. The temperature of the cooling brine is controlled by a series of parallel pipes, in the discharge line from the brine circulating pumps, in the form of a "harp." Three lines, 2½-inch, 2-inch, and ¾-inch, arranged parallel in a header, and fitted with control valves, are opened and closed to vary the amount of brine circulated, this variation being dependent on the tem-

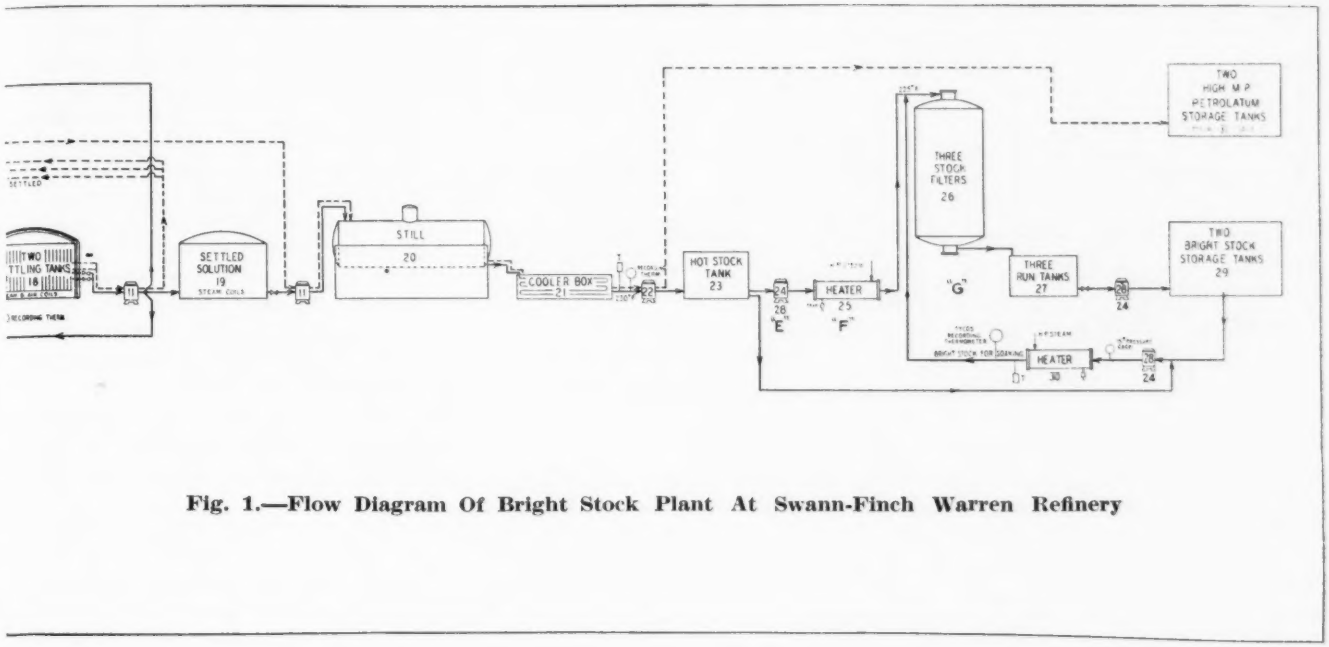


Fig. 1.—Flow Diagram Of Bright Stock Plant At Swann-Finch Warren Refinery

perature differential desired between the oil and brine in the tank.

When chilling is first started this differential may be held as a fairly wide one, cooling the oil down rapidly until it reaches the point where crystals begin to form in the solution. At this point the differential is reduced, by reducing the amount of brine circulation, to a few degrees F. and as chilling proceeds the rate of cooling is gradually decreased until the temperature at which settling is to be carried out is attained, after which only enough brine is circulated to offset radiation losses.

Such a method avoids the evils of shock chilling, permits the formation of a relatively small number of well-formed crystals at first, and slow cooling thereafter promotes crystal growth on the first crystals as a base, instead of fostering, by "hocking" the formation of new crystals all during the cooling period. In this way the resulting crystals are large and heavy, settle well, and do not form an "amorphous" mass which refuses to settle but remains more or less suspended in the solution, increasing the length of the cycle, and requiring the employment of a larger percentage of naphtha to obtain a solution from which the wax will settle satisfactorily.

The cooling coils in the settlers are also arranged more or less midway of the tank, in such matter as to promote to the best advantage the proper amount of convection, to cool the greatest portion of the solution so as to avoid the "turning over" of the settler, an accident well known to every operator of a settling plant. This is caused by the supercooling and consequent contraction in volume of the solution at the top of the tank, where many cooling coils are placed. This top-heavy mass remains quiescent, instead of sinking gradually to the bottom as it is cooled, as the designer intended. When the density differential, produced by difference in temperature, of the top and bottom layers becomes great enough, the entire cooled mass plunges to the bottom of the tank in what amounts to one movement, resulting in a general mixing and agitation, with the consequent slowing up of the settling cycle.

At the conclusion of the settling period three "layers" are considered present in the tank; the upper layer a comparatively wax-free stock solution; the middle layer a mixture of wax oil solution, and the lowest layer consisting of high melting point petrolatum with a relatively small admixture of oil solution. Each layer is run to a separate storage tank. The top layer goes to a shell still where the naphtha is driven off to bring the stock back to "flash," the naphtha being condensed and recovered for further use. The middle layer may be further settled to recover more petrolatum, the naphtha being incorporated with fresh solution which may be mixed with the second run material, or if resettled separately the naphtha is also recovered in the re-run still.

The last or petrolatum layer is heated by steam and removed from the tank 50 per cent of naphtha added, and resettled, naphtha again removed in the still, leaving crude petrolatum as residue.

Reference to Fig. 1 (center) shows the rather unique arrangement for introducing cold brine into the system and returning warmer brine to the chilling plant. In the return brine line a 1-inch vent is placed, at the top of a loop of pipe higher than the top of the tank. When it is desired to add cold brine to the system a valve in the line from the ammonia plant is opened and more brine drawn in. The excess liquid thus present in the coils builds up over the loop and overflows the top and returns to the brine cooler, thus reducing the brine temperature control to the simples manipulation.

The carbondale refrigeration plant consists of a Worthington two-stage, 90-ton ammonia compressor driven by a 2200-volt H. P. synchronous motor, with a brine cooler and the necessary accessories as found in the ordinary plant for this purpose.

After removal of naphtha from the settled stock, the lat-

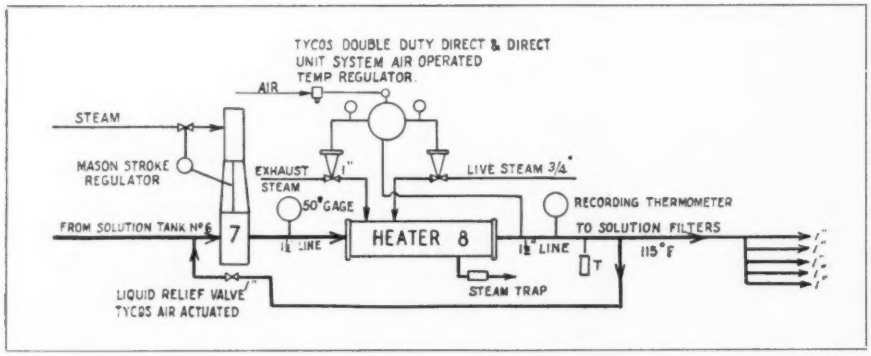


Fig. 2.—Heater and Control System For Five Solution Filters

ter passes through another heater and to three stock filters at temperature of 225 Fahr. to be brightened and brought to a final color of 8 N. P. A., filtering downward in this case, removing haze and any slight discoloration that may have appeared during previous processing and distillation.

When settling at plus 5 degrees Fahr., the plant in producing 25-30 poor bright stock of excellent quality.

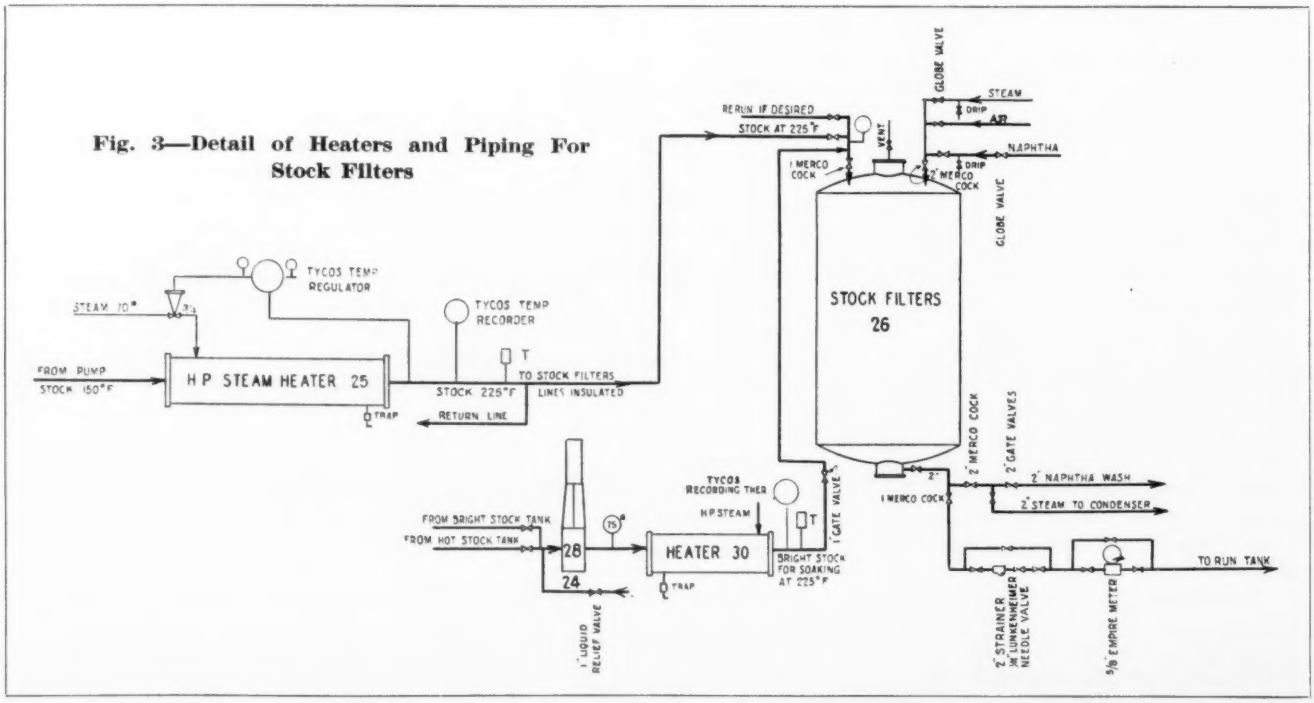
The filters, both solution and stock, are housed in a two-story cinder block building, twelve cylinders in two rows, each cylinder having a capacity of 10 tons of earth. A belt conveyor on the upper level brings burned earth from the Nichols-Herreshof burner in the adjoining building and dumps it into a movable chute which runs on a 3½-foot track between the cylinders, filling them in turn. Another movable chute at the bottom carries spent earth to a single belt conveyor which delivers it in turn to a bucket hoist to be dumped into a bin atop the building. The earth burner has eight hearths, and the rabbles are operated by a 220-volt, 5 H. P. Armor motor through reducing gears.

Another interesting feature of the design and operation of this plant is the arrangement made for "soaking" the fresh earth in the cylinders before actual filtration is started. Filtered solution, in the solution filters, and filtered bright stock, in the stock filters, is pumped from the rundown tanks through high pressure steam heater, heated to the running temperature of the filter to be soaked, (110-115 Fahr. for solution, 225 Fahr. for stock, filtered), and thence to the fresh filter, which is thoroughly soaked before unfiltered solution or stock is introduced. According to Dr. Leslie, the designer, soaking with finished filtered solution or stock prepares the earth in a much better manner for maximum filter yield than if steam refined stock or solution is used.

Theoretically, the plugging of the sub-microscopic pores of the fresh earth by the comparatively large molecules of the coloring matter and impurities which are removed selectively from the oil during filtration, occurs much less quickly when earth is soaked with the filtered oils. In cases on record, filter yields have been increased by from 15 to 50 per cent by this practice.

All filters in the plant are heated by circumferential pipe coils in which exhaust steam is used. Similar economies have been practiced throughout the plant, and a study of the features of the plan of the entire refinery show a careful and meticulous attention to detail, a correlation of each unit with other units, resulting in simplicity, ease of control and maximum economy of operation.

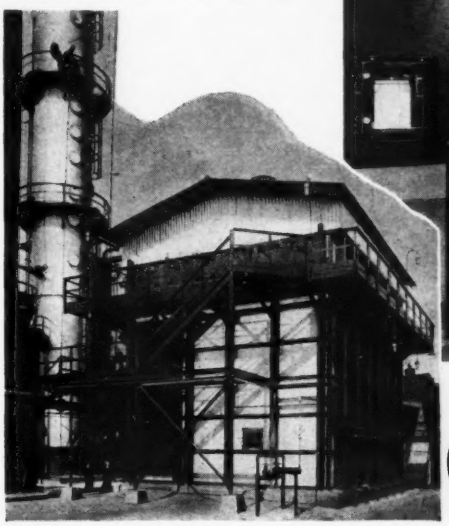
Fig. 3—Detail of Heaters and Piping For Stock Filters



ECONOMY--
Through EFFICIENCY

Right: Automatic Control Board for Winkler & Koch unit with three Brown tower controls, a liquid level control, a control for flow and a furnace control with safety feature.

Below: General view of Winkler & Koch unit.



Only One Man Per Shift Operates This Winkler and Koch Installation

The above illustrations show a Brown Instrument board for operating a Winkler and Koch unit.

This board carries three tower temperature controls, one liquid level control, one flow control and one furnace control—all Brown Automatics. The efficiency of these automatic controls is such that only one man per shift is needed in the control house.

The installation also includes a Brown Indicating Pyrometer with a 24-point switch, a Brown Instrument Board Clock, etc.

Let our engineers cope with your control problems, too. Write for information.

THE BROWN INSTRUMENT COMPANY
4488 Wayne Ave. Philadelphia, Pa.
Branches in 20 Principal Cities

ENGLISH ASSOCIATE:
A. F. CRAIG & CO., Ltd.
Paisley, Scotland

EASTERN REPRESENTATIVE:
FRANK deGANAHL
Grand Central Terminal Bldg.
New York, N. Y.

Brown Automatic Controls

To Measure is to Economize

The WINKLER-KOCH ENGINEERING CO.

Consulting and Construction Engineers
WICHITA, KANSAS

The Law of Chemical Patents

"THE Law of Chemical Patents" by Edward Thomas, is written for the man who is interested first in what a patent shows on its face; what its relation is to the prior art; and what its relation is to possible infringements.

The book tells what has been said in the courts on every phase of the subject. For example it cites *what the Courts have said on*:

Nature of a Patent; Disclosure in a Chemical Patent; the invention, its date and nature; nature of a patentable process; anticipation by prior uses; by prior publication; Nature of a Valid process claim in the patent; infringement of valid process claim; Permissible amendments; amending patent after it issues; double patenting and the joinder of inventions; assignments, licenses and royalties; contests between rival claimants; patent suits and patent evidence and some other more minor subheads.

Actions taken in courts are cited with complete references to the legal documents involved, with quotations of the statements pertinent to the subject under discussion. Each chapter is introduced with a brief outline of the subject, and the remainder is devoted to quotations which definitely answer questions on which information should be available to those holding patents or about to apply for them.

The present complicated situation with regard to patents on refining processes, especially cracking, makes this book particularly valuable to every refiner, oil attorney, chemist, etc. 420 pages.

———*Clip and Mail*———

NATIONAL PETROLEUM NEWS

Penton Bldg., Cleveland, Ohio

Send me at once "The Law of Chemical Patents" by Edward Thomas.

Enclosed is $6.00.

Name.....

Address.....

City.....

NEW PATENTS

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

October 14, 1930

PRODUCTION

Non-reverse mechanism for rotary (deep-well) pumps—Roland M. Schlegel and Alfred H. Bowlzer, jr., Los Angeles, Calif., assignors to Kimball-Krogh Pump Co. Filed Apr. 26, 1927. No. 1,778,341.

Expansible reamer — Victor York, Whittier, Calif. Filed Apr. 30, 1927. No. 1,778,442.

Deep-well pump—Edward E. Johnson, St. Paul, Minn. Filed Dec. 22, 1927. No. 1,778,497.

Well-drilling system — Gerhard P. Lehmann, Ploesti, Rumania. Filed Jan. 20, 1926. No. 1,778,501.

Casing connection—Billie Clark, Winfield, Kans. Filed Apr. 26, 1929. No. 1,778,662.

MISCELLANEOUS

Four-way-valve pump (for fluid-dispensing apparatus) — Leo Deutsch, Beaver, and George J. Genung, Rochester, Pa., assignors to Wayne Pump Co., Baltimore, Md. Filed Aug. 25, 1927. No. 1,778,210.

(Liquid)-dispensing apparatus — Ernst Hurlbrink, Berlin, and Georg Meister, Berlin-Blankenburg, Germany. Filed June 22, 1928. No. 1,778,390.

Liquid-sealed relief-valve—John E. Moore, Chicago, Ill., assignor to Standard Oil Co. of Indiana. Filed May 14, 1928. No. 1,778,460.

October 21, 1930

REFINING

Oil-purifying process (for used oil)—Leo D. Jones, Philadelphia, Pa., assignor to Sharples Specialty Co., same place. Filed Apr. 29, 1924. No. 1,778,831.

Distillation of crude oils—Frank Tinker, Streetly, England, assignor to Sinclair Refining Co., New York, N. Y. Filed Feb. 9, 1927. No. 1,779,222.

Process for the separation of fatty or waxlike bodies from their solutions (in petroleum distillates)—Johann K. Pfaff and Kurt Bottger, Uetze, and Adolf Sieweke, Dollbergen, Germany. Filed July 2, 1929. No. 1,779,287.

Plant for the treatment of hydrocarbons—Louis B. Cherry, Louisville, Ky., assignor to C & C Developing Co., Kansas City, Mo. Filed Mar. 10, 1922. No. 1,779,356.

Art of manufacturing useful products from hydrocabrons—Herbert R. Rowland, East Orange, N. J., assignor to C & C Developing Co., Kansas City, Mo. Filed Nov. 21, 1923. No. 1,779,402.

PRODUCTION

Pump—Fred M. Oeder, Flint, Mich. Filed Aug. 14, 1929. No. 1,778,723.

Sand-flinging bearing for well-drills—Charles C. Scharpenberg, Bakersfield, Calif., assignor to Standard Oil Co. of California. Filed Apr. 17, 1926. No. 1,778,731.

Oil-well flooding apparatus—Nelson E. Wightman, Bolivar, N. Y. Filed May 7, 1924. No. 1,778,740.

Motor-protector—Armais Arutunoff, Los Angeles, Calif., assignor to Reda Pump Co., Bartlesville, Okla. Filed Apr. 15, 1927. No. 1,778,787.

Casing-centering device — Herschell R. Irvine, Long Beach, Calif. Filed June 18, 1927. No. 1,778,830.

Desilting nozzle-head — Charles B. Harp, Los Angeles, Calif. Filed Aug. 20, 1928. No. 1,778,942.

Roller bit—John C. Stokes, Houston, Tex., assignor to Reed Roller Bit Co., same place. Filed Sept. 6, 1927. No. 1,778,966.

Combination rod and tuning fishing-tool—Charles A. Towne, Tulsa, Okla. Filed Nov. 20, 1929. No. 1,778,968.

Hydraulic casing-spear — Paul G. Gates, Gardena, Calif. Filed Aug. 5, 1929. No. 1,779,123.

Working-barrel honing device—Paul G. Douglas, Mexia, Tex., assignor of one-fourth to Associated Factories Corporation, Dallas, Tex. Filed June 30, 1928. No. 1,779,161.

Surface rod-line jack—Joseph M. Keller, Kaw City, and Elmer R. Thomas, Denoya, Okla. Filed June 29, 1982. No. 1,779,320.

MISCELLANEOUS

Liquid-dispensing mechanism—William S. Townsend, Rochester, Pa., assignor to Wayne Pump Co., Baltimore, Md. Filed July 17, 1925. No. 1,778,738.

Oil and gas separator—Millard F. Waters, Tulsa, Okla., assignor to Smith Separator Co., same place. Filed Dec. 26, 1928. No. 1,779,023.

High-compression-motor fuel—Philip S. Danner, Point Richmond, and John E. Muth, Berkeley, Calif., assignors to Standard Oil Co. of California. Filed Sept. 26, 1927. No. 1,779,061.

Liquid-dispensing apparatus — John B. Davis, Springfield, Mass., assignor to Gilbert & Barker Mfg. Co., West Springfield, Mass. Filed Mar. 31, 1928. No. 1,779,270.

October 28, 1930

REFINING

Flue-gas recirculation system for shell stills—Harry A. Atwater, Kansas City, Mo. Filed Feb. 16, 1928. No. 1,779,405.

Oil-still—David S. Jacobus, Jersey City, N. J., assignor to Babcock & Wilcox Co., Bayonne, N. J. Filed Jan. 19, 1925. No. 1,779,434.

Hydrocarbon-oil conversion—Carbon P. Dubbs, Wilmette, Ill., assignor to Universal Oil Products Co., Chicago, Ill. Filed July 30, 1927. No. 1,779,465.

Splitting up of mineral oils—Michael Melamid, Berlin-Zehlendorf, Germany. Filed Mar. 12, 1925. No. 1,779,486.

Method of and apparatus for dehydrating petroleum oil—Harold C. Eddy, Los Angeles, Calif., assignor to Petroleum Rectifying Co., same place. Filed Aug. 4, 1926. No. 1,779,695.

Method of transforming and distilling hydrocarbons—Adolphe A. F. M. Seigle, Paris, France. Filed July 16, 1920. No. 1,779,828.

Method of treating heavy hydrocarbon oils—Adolphe A. F. M. Seigle, Paris, France. Filed Dec. 12, 1923. No. 1,779,829.

Apparatus for distilling hydrocarbon oils—Harry G. Schnetzler, Whiting, Ind., assignor to Standard Oil Co. of Indiana. Filed Mar. 10, 1927. No. 1,779,918.

Process of neutralizing washed light oil (process of refining crude light oil)—Joseph J. Lawton, Syracuse, N. Y., assignor to Semet-Solvay Co., New York, N. Y. Filed Dec. 31, 1927. No. 1,779,944.

PRODUCTION

Dummy driller—Walter A. Loomis, Long Beach, Calif. Filed Dec. 14, 1927. No. 1,779,480.

Oil-well pump—William M. McMahon, Riverside, Calif. Filed Apr. 23, 1926. No. 1,779,483.

Extensible-plunger pump—Edgar W. Patterson, Los Angeles, Calif. Filed Aug. 10, 1927. No. 1,779,557.

Method of and apparatus for elevating devices in wells—John C. Stokes, Houston, Tex., assignor to Reed Roller Bit Co., same place. Filed June 11, 1929. No. 1,779,567.

Core-bit — Oswald Duda, Houston, Tex., assignor to Reed Roller Bit Co., same place. Filed July 5, 1927. No. 1,779,589.

Apparatus for perforating well-casings—Charles E. Wood, Los Angeles, Calif. Filed Dec. 10, 1929. No. 1,779,-652.

Stage-lift flowing device—Alexander Boynton, San Antonio, Tex. Filed Dec. 10, 1926. No. 1,779,726.

Stage-lift flowing device—Alexander Boynton, San Antonio, Tex. Filed Dec. 10, 1926. No. 1,779,727.

Guide for fishes—Paul F. Yungling, Los Angeles, Calif. Filed Sept. 7, 1927. No. 1,779,792.

Twist-off safety device—Paul F. Yungling, Los Angeles, Calif. Filed May 29, 1929. No. 1,779,793.

Pump—Fred Downey, Fort Worth, Tex. Filed Feb. 7, 1930. No. 1,779,-906.

Apparatus for removing liquid from wells — Robert Deming, Cincinnati, Ohio. Filed June 13, 1927. No. 1,779,-932.

Fishing-tool—William J. T. Jurey, Clifton, Kans. Filed June 19, 1929. No. 1,780,017.

Inside casing-cutter—Ercole Ventresca, Houston, Tex. Filed May 4, 1928. No. 1,780,100.

Fishing-socket—George F. Le Bus, Electra, Tex. Filed July 30, 1928. No. 1,780,134.

MISCELLANEOUS

Liquid-dispensing apparatus — John B. Davis, Springfield, Mass., assignor to Gilbert & Barker Mfg. Co., West Springfield, Mass. Filed Jan. 2, 1929. No. 1,779,904.

Oil and gas separator—Myron E. Wagner, Tulsa, Okla. Filed Feb. 20, 1928. No. 1,780,101.

Apparatus for delivering measured quantities of liquids—Joseph J. M. Gueux, Paris, France. Filed Nov. 30, 1925. No. 1,780,127.

November 4, 1930

REFINING

Treating hydrocarbon oils—Claude W. Watson, Port Arthur, Tex., assignor to Texas Co., New York, N. Y. Filed July 1, 1927. No. 1,780,286.

Process for breaking petroleum emulsions — Melvin De Groote, St. Louis, and Louis T. Monson, Maplewood, Mo., assignors to Wm. S. Barnickel & Co., Webster Groves, Mo. Filed Jan. 21, 1929. No. 1,780,343.

Process for breaking petroleum emulsions — Melvin De Groote, St. Louis, Louis T. Monson, Maplewood, and Arthur F. Wirtle, Webster Groves, Mo., assignors to Wm. S. Barnickel & Co. Filed Jan. 21, 1929. No. 1,780,-344.

Process for breaking petroleum emulsions—Melvin De Groote, St. Louis, Louis T. Monson, Maplewood, and Arthur F. Wirtle, Webster Groves, Mo., assignors to Wm. S. Barnickel & Co. Filed Jan. 21, 1929. No. 1,780,345.

Process and apparatus for treating hydrocarbons—Eugene A. Prudhomme, Neuilly-surSeine, France. Filed June 5, 1926. No. 1,780,536.

Apparatus for separating liquids into constituents possessing a low boiling point and constituents possessing a high boiling point by distillation and rectification. Adolf Messer, Frankfort-on-the-Main, Germany. Filed November 9, 1924. No. 1,780,563.

In the great Port Arthur plant of The Texas Company, temperature control plays an important part in producing the world-famous Texaco Golden Motor Oil.

It is Vilter refrigeration equipment which helps maintain the Texaco standard of an oil whose freedom from cold-sensitive impurities assures thorough protection even tho the temperature stands at zero.

The refining industry has a pattern in Texaco; today's trend toward wax-less lubricants definitely expresses the motoring public's preference.

We shall be glad to give you the benefit of our engineering experience in the refinery field. Write!

THE VILTER MANUFACTURING CO.
1081 Clinton St. » » » Milwaukee, Wis.

BETHLEHEM
WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers, and other Oil Refinery Equipment
Oil Burning Systems

BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*

District Offices: New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis.

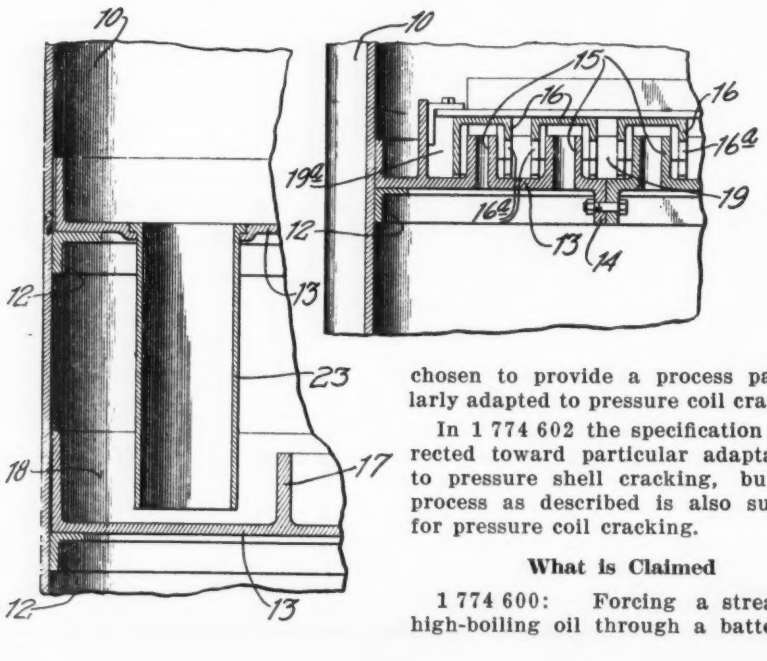
Pacific Coast Distributor: Pacific Coast Steel Corporation, San Francisco, Los Angeles, Portland, Seattle, Honolulu.

New Refining Patents

Fractionating Column. U. S. P. 1 778 475, Oct. 14, 1930, application filed Aug. 6, 1927; Robert E. Wilson and Wm. H. Bahlke, Assignors to Standard Oil Co. of Indiana.

THE fractionating column described and claimed in U. S. P. 1 716 939 of June 11, 1929 has now been improved by a construction in which dams are provided near the ends of the bubble caps, to retard the escape of liquid from between the bubble caps and so keep a nearly uniform depth of liquid around the bubble caps.

In the drawing, 10 is the cylindrical shell of a fractionating column; 12 is one of the circular flanges on which are mounted the plates 13 which are formed in sections joined by downwardly projecting flanges 14. Each plate has a number of upwardly projecting nipples 15 for passage of gas from plate to plate; and each nipple has a rectangular bubble cap 16, serrated on its lower edge as at 16a. The nipples and bubble caps may be arranged in equidistant rows across the plates. The plates have upwardly projecting dams 17 on opposite sides to form a pool 18, parallel to the rows of bubble caps. Adjacent the inner ends of each row of bubble caps is a lower dam 19, its end curved backwardly around the end of the row of bubble caps as at 19a and carried entirely back to the wall of the shell, so that each row of bubble caps is enclosed between the two dams 17 and 19. The uniform liquid depth maintained by this arrangement greatly improves the smoothness of operation of the apparatus.



What Is Claimed

In a fractionating plate of the bubble type, oppositely disposed dams forming pools to receive overflow from higher plates; two rows of vapor uptakes and bubble caps between the dams; two relatively lower dams between the rows of bubble caps, and parallel with the higher dams; and discharge means oppositely disposed on the plate between the lower dams.

* * *

Pressure Shell Cracking. U. S. P. 1 774 600-1, Sept. 2, 1939, application filed June 11, 1920, and 1 774 602, Sept. 2, 1930, application filed July 12, 1929; Edward W. Isom and Eugene C. Herthel, Assignors to Sinclair Refining Co.

THESE patents cover three different embodiments of an invention which provides a novel, improved heating procedure for use in pressure shell cracking, or pressure coil cracking, or both. The new method provides vertical oil flow and high oil velocity during the heating, thus minimizing the deposition of pitch or carbon. The arrangement of the heating tubes is peculiarly compact, permitting use of a gang cleaner with greatest advantage.

In 1 774 600 the heat exchange relations between the heating gases and the cracking stock are chosen and arranged to provide a process which is peculiarly effective in pressure distillation cracking operations.

In 1 774 601, these relations are chosen to provide a process particularly adapted to pressure coil cracking.

In 1 774 602 the specification is directed toward particular adaptability to pressure shell cracking, but the process as described is also suitable for pressure coil cracking.

What is Claimed

1 774 600: Forcing a stream of high-boiling oil through a battery of series-connected banks of series-connected vertical heating tubes arranged in a vertical heating flue into a vapor separating receiver, passing heating gases from a firebox across the upper end of the heating flue first in heat exchange with the last bank of heating tubes and successively with the others in inverse order with respect to the oil flow, and then downward through the heating flue, thereby heating the oil to cracking temperature, and taking off cracked vapors under pressure.

1 774 601: Forcing a stream of high boiling oil successively through two batteries of series connected vertical heating tubes in a vertical heating flue through a pressure reducing valve into a vapor separating receiver, and passing the hot gases in direct, not inverse, direction with respect to the oil flow; other features as in 1 774 600.

1 774 602: Passing the hot gases in alternating down and up flow, generally transverse to the banks of heating tubes, but with fewer alternations in hot gas flow than in the flow of oil in the series-connected banks of series-connected heating tubes; other features as in 1 774 600.

* * *

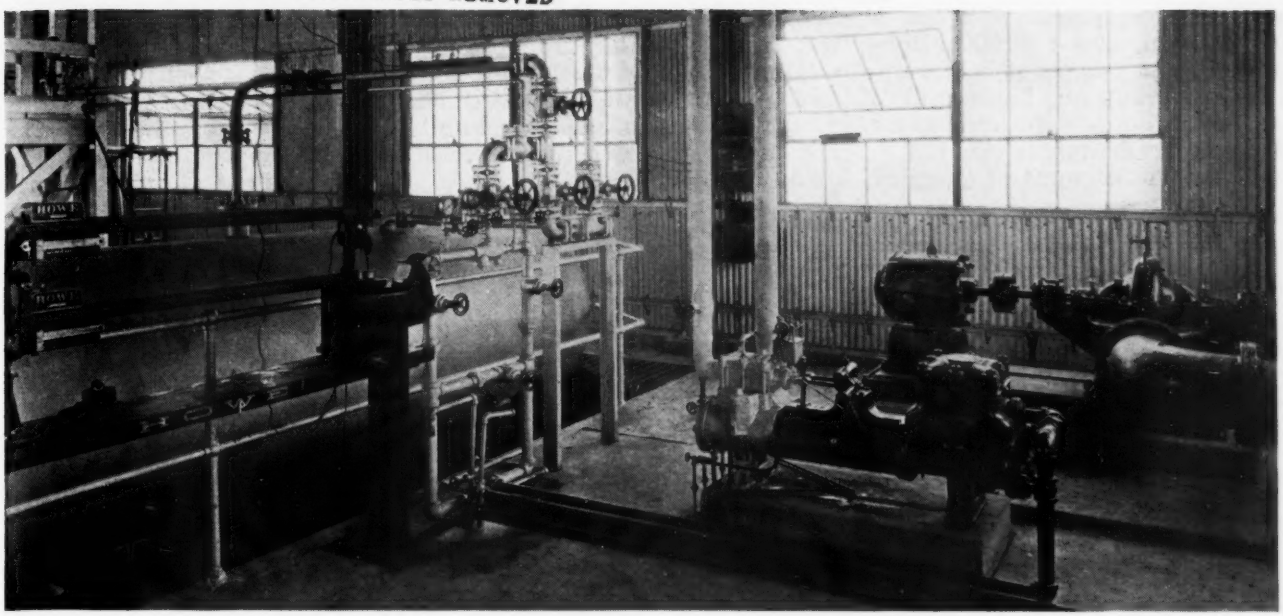
Distilling Crudes, U. S. P. 1 779 222, Oct. 21, 1930, application filed Feb. 9, 1927, and in Great Britain April 28, 1926; Frank Tinker, Assignor to Sinclair Refining Co.

AS A MEANS of improving the efficiency and economy of heat exchange in topping plants and like distilling installations, at the same time permitting independent control of the different parts of the plant, a system is provided which includes a mixing chamber in which hot liquids or vapors from different parts of the plant are mixed so that they reach a common temperature before they enter a separating chamber for liquid and vapor. This enables outgoing heat from any part of the system to be returned to and utilized in the system. Applications of the new system to a topping plant, a like plant with a fractionator added, and a pressure cracking plant, are described.

What Is Claimed

In distilling mineral oils, passing one stream of raw oil through a fire heated heating zone into a mixing zone in which it is heated to distillation temperature, introducing a hot oil mixture including the heated raw oil from the mixing zone to a separating zone, discharging residuum from the separating zone, taking off vapors from the separating zone and partially condensing them by heat exchange with a second stream of the raw oil, and introducing this independent stream of heated raw oil into the mixing zone, there for the first time to merge with the first stream of raw oil.

ADVERTISING PAGES REMOVED



Interior of modern Ethyl plant. The storage tank for the fluid, and the weighing apparatus are on the left, with the eductor in the right foreground and the mixing pump at the right rear

Modern Ethyl Mixing Plant

By Jack Power

N. P. N. STAFF WRITER

TULSA, Dec. 1

METHODS and equipment for mixing Ethyl fluid with base stock have improved with the growing demand for Ethyl gasoline until at present the fluid is shipped and can be mixed in carload lots. That's a long jump since 1923, when Ethyl fluid was admitted to the gasoline through a device attached to the pump at the filling station.

In most modern mixing plants, to which the fluid is shipped in tank cars, a storage tank for the fluid is mounted on a pair of precious metal scales. The car is spotted along side the tank and connections for discharging into the receiving tank applied.

These connections generally consist of pipe nipples and swings, hung overhead, manipulated from a platform from which the operator can keep his eye on the whole system. The tank cars used for transporting the Ethyl fluid are known as class 105-A 300. Their principal difference from standard type cars is that they are not lagged, and have a slightly different dome arrangement. They are vented, and respirators, or gas masks, are not needed by the workmen.

To unload the tank car a vacuum is secured on the storage tank, by means of an eductor. This vacuum is maintained until the tank car is unloaded. When the car is empty, valves on the line going to the storage tank are closed, and the tank car is washed out with gasoline to make sure that all the fluid in the tank car is removed.

In mixing Ethyl fluid with the gasoline, the weight of the fluid is used as the standard of calibration. The scales on which the storage tank of fluid is set are equipped with a weightograph, which reads to within 10 pounds. The fluid taken from the storage tank can be weighed to within five pounds.

The scales are set back so that, when they balance, the desired amount of fluid has been withdrawn. The eductor pump is used to put the fluid from the storage tank into the discharge line of the mixing pump. When ready, the eductor pump is shut down, and the mixing pump started up, after the valves on the line from the storage tank to the mixing pump have been closed. The mixing, or recirculating, pump passes the fluid into the gasoline storage tank through its discharge line, picking the gasoline up in its suction line. The mixture is circulated about one and one-half times to insure a thorough mixing.

Among the principal advantages of this modern system of handling and mixing Ethyl fluid are the following:

Saving in freight to the refiner, which amounts to about 20 per cent. The drums, in which the fluid was formerly shipped, made up about 20 per cent of the total weight of the shipment.

Less labor required in un-

loading a shipment of fluid. A car holding about 8000 gallons of fluid can be completely emptied in about an hour and a half. No dead storage space for empty drums is needed.

The exact amount of gasoline in a gasoline storage tank can be mixed with the proper amount of Ethyl fluid. In this method, the mixing of the fluid is calibrated to gasoline, and not the gasoline to the amount of fluid.

NEW EQUIPMENT

THE Refinery Supply Co., Tulsa, Okla., manufacturer of scientific laboratory and power plant equipment, has off the press a 20 page booklet on specialties for the natural, artificial gas and for the gasoline industries.

In it are described its improved Ac-Me calculators for the measurement and flow of gas; recording gravitometers, specific gravity gas balances, vacuum pumps, manometers, dead weight testers, angle and plane projectors, low temperature fractionating apparatus, look-boxes, and control apparatus for solvent recovery plants.

It also describes such equipment as the tank car calculator with which rapid and accurate calculations of corrected tank car volumes can be made; its loading dome cover and alligator oil thief.

Other apparatus described include the improved orifice well tester, charcoal tube adapter, charcoal distillation apparatus with tail gas absorber and the Reid vapor pressure bomb.

* * *

The Brown Instrument Co., Philadelphia, has on the market a new Brown model 801 indicating pyrometer controller which can be supplied as an automatic control pyrometer, resistance thermometer, tachometer or CO_2 meter.

Among its chief advantages are that reading can be observed directly on 6-inch scale; index on scale for setting to exact control point; instantly and easily adjustable control point; enclosed wiring terminals and motor; mercury switches up to 30 amperes capacity, eliminating relay equipment; and that it is suitable for "on and off" or "three position" control through switches, valves, dampers, etc. The device is available with patented safety which opens furnace circuit if thermocouple or wiring fails.

* * *

Combustion Engineering Corp., New York, has published a 28-page catalog describing its type E underfeed stoker. This stoker, the company says, has been installed in this country to date under boilers totaling more than 1,000,000 rated horsepower.

It is applicable to boilers ranging from 150 horsepower up to 600. It may be installed in a battery of two or more boilers. Line drawing showing suggested application of this stoker to various types of boilers, representative list of installations and test data are included in the catalog.

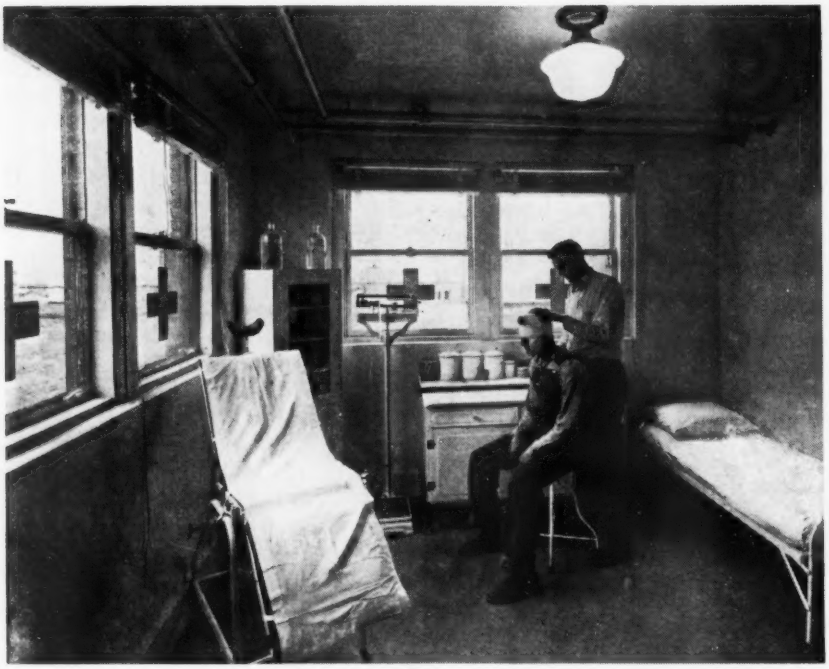
* * *

The Ohio Steel Foundry Co., Springfield, O., in a bulletin on Fahrite, its heat resisting alloy for installations at refineries and wherever strength at high temperature must be provided, says that the strength of Fahrite at high temperatures makes it possible to produce large tube support castings for tube stills and oil cracking units with relatively thin sections and a minimum weight of metal. This alloy resists oxidation and has many times the life of ordinary materials at high temperatures, the company claims.

Fahrite is also used for tube hangers and spacers, I-beam and channel sections, bolts and nuts, and other parts at oil refineries. The bulletin also contains tables on physical properties of Fahrite, its strength in compression and on coefficient of linear expansion.

* * *

The Foxboro Co., Foxboro, Mass., manufacturer of controlling, recording and indicating instruments, has published a 24-page bulletin on recording gauges with steel springs. These new gauges have all steel, all welded movements, providing longer life and better service. the company says. The bulletin describes their manufacture and performance, and gives specifications.



The well appointed first aid room in the basement of the office building at the Barnsdall Refinery at Barnsdall, Okla. Confidentially, the patient being treated wasn't really hurt. The plant hasn't had a lost time accident in over a year, so it was necessary to get one of the boys to pose

ADVERTISING PAGES REMOVED

«Electrical Ear» Picks Up Faintest Whisper Of Knock from Auto Engine

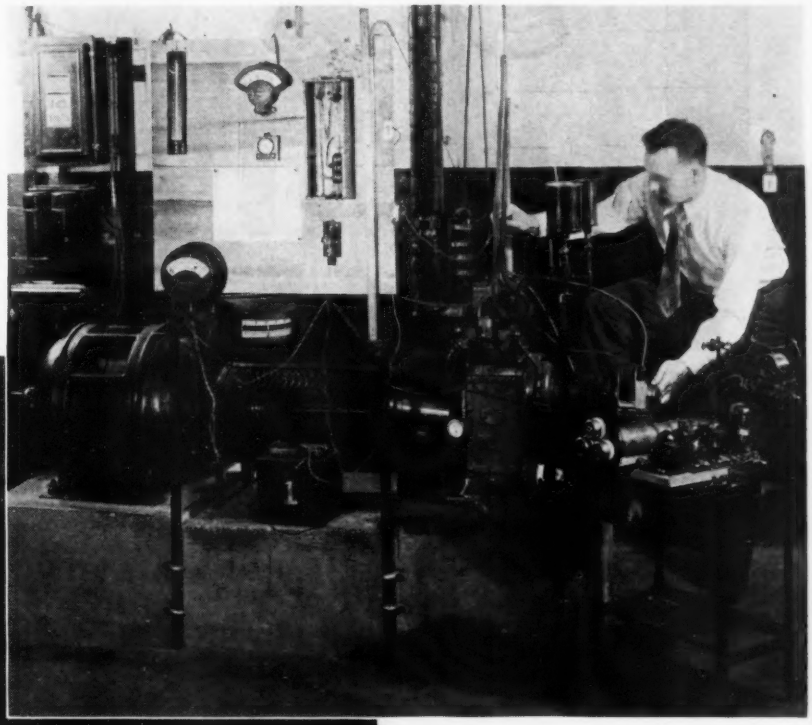
PHILADELPHIA, Dec. 5 MICROPHONE and radio vacuum tubes, magnifying sounds many fold, have been combined with other delicate scientific instruments in the laboratories of the Atlantic Refining Co., to form an electrical ear which detects the whisper of a knock in an automobile engine imperceptible to the ear alone.

The apparatus has been developed by the scientific department of the company, under the direction of Dr. T. G. Delbridge, head of its research laboratories, in research work with new highly anti-knock gasolines. The company announces it has developed a new type of gasoline.

At right, microphone, vacuum tubes and other devices, forming the electrical ear, are shown in the foreground during an anti-knock test being conducted by Harry F. Huf, chemical engineer, in the laboratories of the Atlantic Refining Co., Philadelphia

◆

Below, a closeup of John R. Sabina, electrical engineer, and the "electrical ear" in operation. The "mike," suspended near the testing engine picks up the faintest whisper of a knock, passes it through "high pass" filters and tubes which magnify the sounds a hundred fold, thence to be registered on a meter dial



In operation, the "mike" is suspended from coiled springs near the engine testing the gasoline. Sounds that could not be heard by men are picked up by the microphone, and the rest of the apparatus then selects and magnifies the knock and registers the sound intensity on the dial of a sensitive meter.

Normal engine noises are screened out by "high pass" filters, allowing only the knock, which has a frequency of approximately 3000 vibrations a second, to pass through the vacuum tubes.

This electrical ear, first employed as a guide in research work, proved so valuable that it is now in continuous use in the company's laboratories.

Farrell

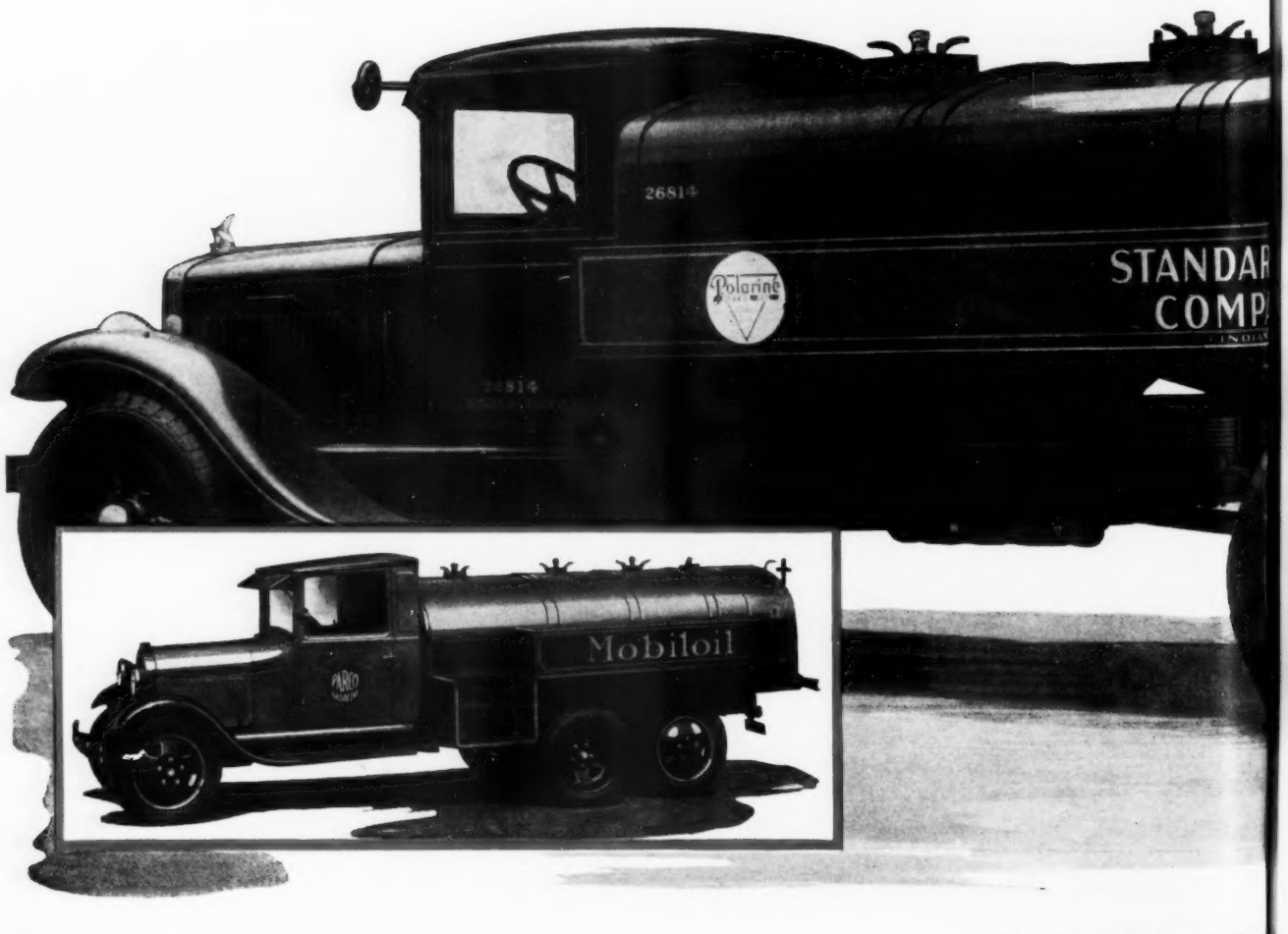
'six wheel' trailer tanks

You are entitled to the maximum "pay-load" capacity of your truck — are you getting it?

Frankly speaking — there is no other tank built that gives you as wide a range of possible heights, widths or lengths — which means "maximum pay-load" capacity — as a Farrell.

The unit below is a 2000 gallon 6-compartment semi-rectangular tank equipped with 14" manholes, 6" filler openings, steel bucket box, hinged bumper, side racks, sign boards, mounted on International with 6 wheel attachment.

(Insert)—This is an 800 gallon 4-compartment oval tank equipped with 6" filler openings with caps and vents, steel bucket box, side racks, drop panel sign boards, vertical barrel racks, adjustable steel underframe, and is mounted on 131" wheelbase Ford "multi-wheel" 6-wheel unit.



ADVERTISING PAGES REMOVED

Keeping Fuel Oil Tank Trucks Moving at Minimum Cost

By Fred E. Kunkel

THE Griffiths Consumers Co., of Washington, D. C., coal and fuel oil merchant, operates many trucks in its daily deliveries of fuel oil. Keeping this fleet moving without embarrassment to the office is the job which falls to Mr. Robertson, who has charge of the company's garage and who is responsible for the uninterrupted movement of the fleet on scheduled time and with a minimum of lost motion, guaranteeing to customers virtually 24 hour service.

One thing that stands out noticeably with this company is that everybody works for the best interests of the company. There is complete teamwork throughout the organization and all the work is systematized and orderly arranged.

The garage itself is a mammoth three-story concrete structure with a foundation that will accommodate additional stories over it if desired and as needed. In other words, there is ample room for expansion as the business grows.

Everything is run according to schedule and careful records are maintained so that the company management can tell at any time whether the fleet is making or losing money. All the departments are separated for bookkeeping purposes. All expense is charged direct to each department, thus:

C-37 —General capital account
C-43 —Garage expense for coal trucks
C-47 —Labor in the garage that cannot be charged to a job, but is charged to the garage
C-51 —Cleaning (Charge washers time, etc., to it.)
C-116—Bethesda yard expense
C-143—Truck driver expense
C-216—Rosslyn expense
C-316—Same for Southeast yard
C-416—Same for Northeast yard
C-743—For oil truck drivers
C-943—Gasoline

The average hours of labor per day are ten hours. A workman's daily time card furnished the basis for wage computations and also for calculating expense records. The card is shown as Fig. 1.

The workman's daily time card, therefore, becomes the basis for all figuring on jobs done in the garage. Here is job number 23 which is an overhauling job, and the man starts work on it at 7:20 and stops at 5:50. The shop foreman gets this card and puts the name of the man at the top and signs his name at the bottom. Mr. Robertson then O.K.'s it and turns it over to the bookkeeper, who puts it on the job order, which is shown as Fig. 2.

In handling overhaul or repair jobs in the garage, this job order tells the tale and the resulting data gives the cost of repairing or overhauling each truck.

Everything is done by time clocks. When a driver reports in the morning, when he leaves at noon, when he comes back at noon, and when he leaves at night, he punches the clock. The driver's time record is shown on the Working Record of Truck No....., which is shown in Fig. 3.

This working record of each truck is used at all of the yards, of which there are seven. These cards are all filed in the office in a pay envelope, which

WORKMAN'S DAILY TIME CARD

Noon out.....
Noon in.....

Name..... Date.....

Job or truck No.	DESCRIPTION OF WORK	Elapsed time	Clock rings

O.K. by.....

Fig. 1

is used to figure each man's wages, and envelopes are filed according to department and alphabetically by the name of the driver. This envelope is printed on the front as shown in Fig. 4.

Every truck driver has a book cover of metal with his number on the front, in which he keeps his job card or working record until it is turned in at the end of the day. The name of the driver is filled in by the oil truck drivers.

The foreman of the yard tells him he is going to deliver oil at 1507 14th Street and that it is a gravity or a pump job, whatever it may be. The driver then rings up and on his return, he punches the card again, showing exactly how long it took him to make that delivery. The same procedure continues through the day.

When he comes into the garage at night, the driver stops at the pump and fills the gasoline tank and checks the oil level before he puts it away for the night and then rings "in" and makes his report. On the counter in the office is a pad on which he makes a pencil notation as to the condition of the truck, such as: "No. 85, clutch slipping, tighten service brake." He also reports as to any accidents, property damage, etc.

From these time cards, wages are figured and they also furnish the basis for an "Analysis of Truck Operations." From the "Working Record of Truck No. ....," the bookkeeper can tell how many trips the driver made that day, the amount of oil handled, and the time consumed in delivery. This then shows the total amount of oil handled and deliveries per trip.

Everything is then entered on this monthly analysis record, is totaled, the date is entered and at the end of the month, it is put on a summary sheet which is the same form but is for each week. An odometer reading is taken on the fifteenth and at the end of each month. The number of miles per gallon is figured out. If the truck worked ten hours, it is so marked, and if only eight hours on the job and two in the shop, it is so shown.

"By this we can tell whether the unit is making money or not," says Mr. Robertson. "Here, for instance, we have a 1918 Packard, costing us about 18 cents a ton. Here is a truck which cost us $1 a ton to deliver in the month of July. We lost money that month. The next month it only cost 65 cents, the next month 70 cents. Here is another truck costing 70 cents for this month, 50 cents for the second month and 58 cents for the third month. The maintenance was $12.60 on that unit and the gasoline used was 281 gallons, with 111 pints of oil, and the cost per ton 18c average, miles per gallon 2.6 or a working record of 248 hours, idle 7 hours, in the shop 5 hours.

"We figure the amount of gas and oil used by the oil truck fleet and maintenance is on a time and expense basis. It is also included on the analysis of

JOB ORDER

Date.....
Chassis No.....
Job. No..... Body No.....
Order given by.....

Instructions		Labor										Total
No. or name of mechanic	Hours	Date of month										
		1	2	3	4	5	6	7	8	9	etc.	

Material and supplies.....

Order No.	Description	Price	Order No.	Description	Price

Charge all expense to.....Total material cost.....
Total labor cost.....
Charge part to.....Total labor cost.....

Entered by..... Deb. Acct. No..... Cred. Acct. No..... Work compl.....

Fig. 2

truck operation sheet. From this sheet, we make up at the end of each month a summary which is given to Mr. Griffiths showing the truck working time:

(1) Number of trucks in use
(2) Number of trucks idle
(3) Total working hours for each truck
(4) Number of hours in shop

And this is shown for each department while at the end of the fiscal year (April 1), we give a yearly summary of truck operations. This report tells us when we are making money or when we are losing it. If we were working 54 per cent of our time and were idle 42 per cent, that is bad, and so we go into the question of whys and hows and wherefores.

"We had 97 trucks that actually ran last month every day. Of the 97, there were 54 coal trucks out of our garage, 18 out of the oil department, 10 out of Bethesda, and 15 out of the building materials department.

"We have a weekly bulletin board showing the schedule of all Sunday assignments for shop mechanics and for all late duty assignments on Monday.

"When a driver comes in at night and reports that at such and such a place the address was wrong, we fill out a form designated Service Correction Memo, and send it to the main office with the notation to correct the record, asking them to make the necessary change in order to have a satisfactory delivery. This form is shown in Fig. 5.

"This is a form we use in the collection department when a driver reports that an address is wrong.

"One of our principal troubles in fleet maintenance is getting and keeping a decent mechanic. We have our own trouble getting good ones. We train them in our shop. We employ nine men and a foreman in summer and ordinarily 15 in the winter. Our chief concern is keeping the trucks on the street with as little expense as possible and keeping their appearance good.

"We keep our large trucks on the first floor and the small trucks are run up the ramp to the second floor, while our shop is on the third floor. We use sawdust and shavings for taking up the oil on the floor and cleaning up.

"We have a special service truck for our maintenance man to repair property damage or for plant maintenance at the different yards and a regular wrecker for road troubles. This wrecker will pick up a five-ton truck with 1500 gallons of oil on it, for instance, and is the heaviest wrecking equipment in Washington.

"We can do anything from minor repairs to completely rebuilding a truck, if necessary. We have our own paint shop and we spray everything.

"We salvage everything and nothing goes to waste. We take trucks apart when we junk them and when we get through using a unit, we junk the equipment altogether. Meanwhile, we have it systematically and orderly arranged for possible future use—each type of accessory or equipment being kept all together in one place, but if it is an absolutely worthless part, we just junk it.

"We try to keep system and order in all the bins and compartments of these old parts.

WORKING RECORD OF TRUCK NO.....

Out	In	Out	In	Out	In
Garage					

Date..... 19.....

Driver..... Wages earned.....

Helper..... Wages earned.....

Deliver.....

Address.....

Driver's work at building..... Returned.....

ETC.....

Fig. 3

DEPARTMENT..... WEEK ENDING..... NAME.....

Day	Hrs.	Rate	Amt.	Acct.	Garage			Oil	Gas
					C-43	G-37	C-43B		
Fri									
Sat									
Sun									
Mon									
Tues									
Wed									
Thu									

Fig. 4

SERVICE CORRECTION MEMO

Correct all errors

Give better service

.....Yard Truck No..... Date.....

Mr.....

Correct.....

Address

As given.....

Remarks:

Signed.....

Fig. 5

When we take out an engine, we save that until we decide to get rid of that make, and then we junk it. We save all tires until we get through with that particular size. Here we have all the old crank shafts, cam shafts and all motor parts which we have salvaged and which we only junk when we have no further use for it.

"One piece of equipment that we will put in shortly is a portable traveling crane in a track which will go from the blacksmith shop right up to the elevator, and will be used for lifting off bodies, changing from coal to oil, or vice versa, from oil to building materials, and for lifting a motor out of the car for overhauling, taking a cab off, etc.

"We keep three men on the first floor all the time to take care of greasing, oiling and checking minor repairs. These men go over every truck as it comes in and they have a sheet to fill out for each truck. They are required to check the spark plugs, clean them, adjust the gap, adjust the points on the magneto or distributor, tighten the water pump, fan belt, flush out the radiator, and make a thorough inspection and report anything that they find which might cause that truck to go into the shop. This form reads as follows:

Grease truck all over.

Change oil and flush out crank case.

Wash off battery and check water level in battery.

Check and tighten all battery connections.

Check air pressure in tires.

Tighten rear axle nuts.

Tighten wheel studs and nuts.

Check front wheel alignment.

Check brakes and adjust if necessary.

Check generator and ammeter.

Check lights.

Check distributor points.

Check spark plugs. (Clean and adjust gap.)

Try out and report any faults or defects, either of body or chassis.

Flush out radiator.

WORK DONE BY.....

REMARKS

"This report comes back to my desk each day and when a truck can be spared and is available, it goes to the shop and has that work done. The men have to check this test sheet and sign it, O. K. each item, and these reports are filed, and if there is any comeback on it, I check back to see who it was done by.

"We check up all our drivers for insuring economical delivery and hauling, stops and starts. We use a bonus system to insure that, and we keep a man checking up on the drivers on the streets. When they go into the yard, he hops on the truck and may go the entire route or drop off and catch one going in the other direction. We give our drivers demerits for careless driving, or fast driving, for damage to customer's property, for accidents on the street, etc.

"Any street accident or customer's property damage or complaint knocks the driver out of his bonus for that week, and if they have no trouble of any kind, they get a certain amount each week from a perfect score, usually one dollar. But to keep anybody from crying favorites, if a driver loses a bonus, it does not come back to the company but it is pooled for the drivers who have a perfect score for three months."

Hunting Carries Added Perils This Year

(By A.N.M. and W.F.T.)

CLEVELAND

The economic situation has struck at the very vitals of the home in the region of Oil Creek, Pa.

Where once proud petroleum plutocrats held forth—where hitherto the cup of sustenance has been full to overflowing, the populace has taken to the ways of their ancestors to eke out their daily rations.

J. M. Sitler of the National Transit Pump Co.—gaunt, haggard, a mere shadow of his former robust self—set out a couple of weeks ago to bag a deer, rabbit or whatnot to quell the pangs of hunger burning at his vitals. But he recked not the economic condition. He failed to take cognizance of the fact that many, many more were out for the same purpose.

While parked on a gentle slope so prevalent in that territory, grimly daring the most tigrish hare to approach within range of his trusty weapon, a shot rang out in the wilderness, a resounding shot—which echoed melodiously through the valley of Oil Creek.

Well—we won't say that they've reached the point of hunting each other. We will say that friend Sitler was tunked in several places with large size buckshot. And we'll say that he is recovering nicely and rumor has it that he has laid in a large supply of canned goods to feed himself through the winter. Then—you can draw your own conclusions.

ADVERTISING PAGES REMOVED

ON THE LAZY BENCH

A Bad Kick

Life Insurance Agent—"Do you want a straight life?"

Prospect—"Well, I like to step out once in a while."

—The Unloading Rack

* * *

"The enemy are as thick as peas. What shall we do?"

"Shell them, you idiot; shell them!"

—Pure Oil News

* * *

Bob: What's a "tailspin?"

Steele: It's the last word in aviation.

—The Vent

* * *

The New Car

Father—"How many miles to the gallon?"

Mother—"What color is the upholstery?"

Son—"How fast will she go?"

Daughter—"Has it a cigarette lighter?"

Neighbors—"How can they afford it?"

—The Unloading Rack

* * *

Here's one on the absent minded flapper who rode 10 miles into the city to have a tooth extracted and when the dentist told her he was out of gas got out of the chair and walked home.

—Pure Oil News

* * *

Question: "Do the girls of today wear too thin skirts?"

Answer: "No, only one."

—The Gas Line

* * *

Modern Drug Store Language

Frank—"A mustard plaster."

Drug Clerk (force of habit)—"We're out of mustard; how about mayonnaise?"

—The Unloading Rack

* * *

Hubby (at 3 A.M.): "It's a great wife if she don't waken."

—The Gas Line

* * *

Or Ten Packs

Teacher—"If a number of cattle is called a herd, and a number of sheep is a flock, what would a number of camels be called?"

Little Johnny—"A carton."

—The Unloading Rack

Epitaph

Here lies a man who saved his all
For days when the rain and snow should fall;
He knew no pleasure, shared no game—
And died before the blizzard came.

—The Unloading Rack

* * *

A Thrill While It Lasts

Greenboy: Of course I know marriage is a grave step.

Oldun: Step! My dear lad, it's more like a flight of steps and every one of 'em greased.

—Pure Oil News

* * *

History records few women who laughed at their husband's jokes. Those few had beautiful teeth.

—The Unloading Rack

* * *

With Violet in his arms,
He drove his car—poor silly
Where once he had a violet,
He's now holding a lily.

—Pure Oil News

* * *

Silence Is Golden

She—"You used to call me sweetheart before we were married. Now you don't call me anything!"

He—"That shows my self-control."

—The Unloading Rack

* * *

A fool there was who took a chance—
They carried him off in an ambulance.

—Pure Oil News

* * *

Truth in Advertising

And another feature that the makers of the Dictaphone could truthfully advertise is that it never takes a man's mind off his work by crossing its knees.

—The Unloading Rack

* * *

Small Child: "Sister, what made the tower of Pisa lean?"

Stout Sister: "I wish I knew, darling, I'd take some myself."

—The Gas Line

"You don't serve *tea* at a filling station"

"I'm not naturally rough, but you know how it is 'round a service station. It certainly isn't any tea-room—and it's no place for flimsy equipment.

"I want my oil measures to stand the gaff. I want 'em tough enough that they won't need pampering.

"So that's why I buy Brookins 'All-in-One' Measures. I've found out that they're the measures that take rough handling and like it. And that's not just talk either. I've got a couple of Brookins Measures around here that I've been using every day for more than three years. So when I talk about Brookins' durability I really know what I'm talking about."

—Bill

* * *

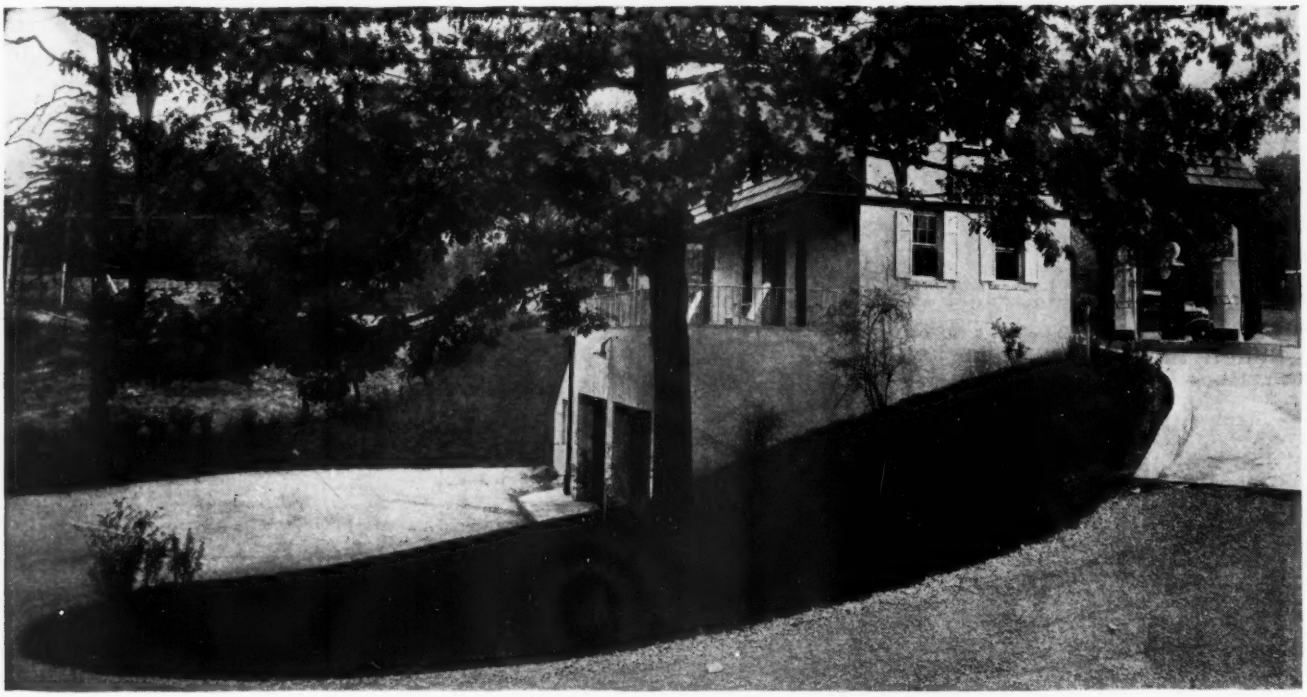
Bill's right about long service. For we have letters in our files from filling station owners telling of Brookins Measures that have been in daily use for periods of from four to six years.

Ask your jobber salesman to fix you up with a set of Brookins. And be sure you get what you ask for. Look for the Brookins name stamped on the side.

THE BROOKINS MFG. CO.
722 Hawthorne St. Dayton, Ohio

"Satisfying Aids to Satisfying Service"

Sloping Lot Permits Unique Station Design



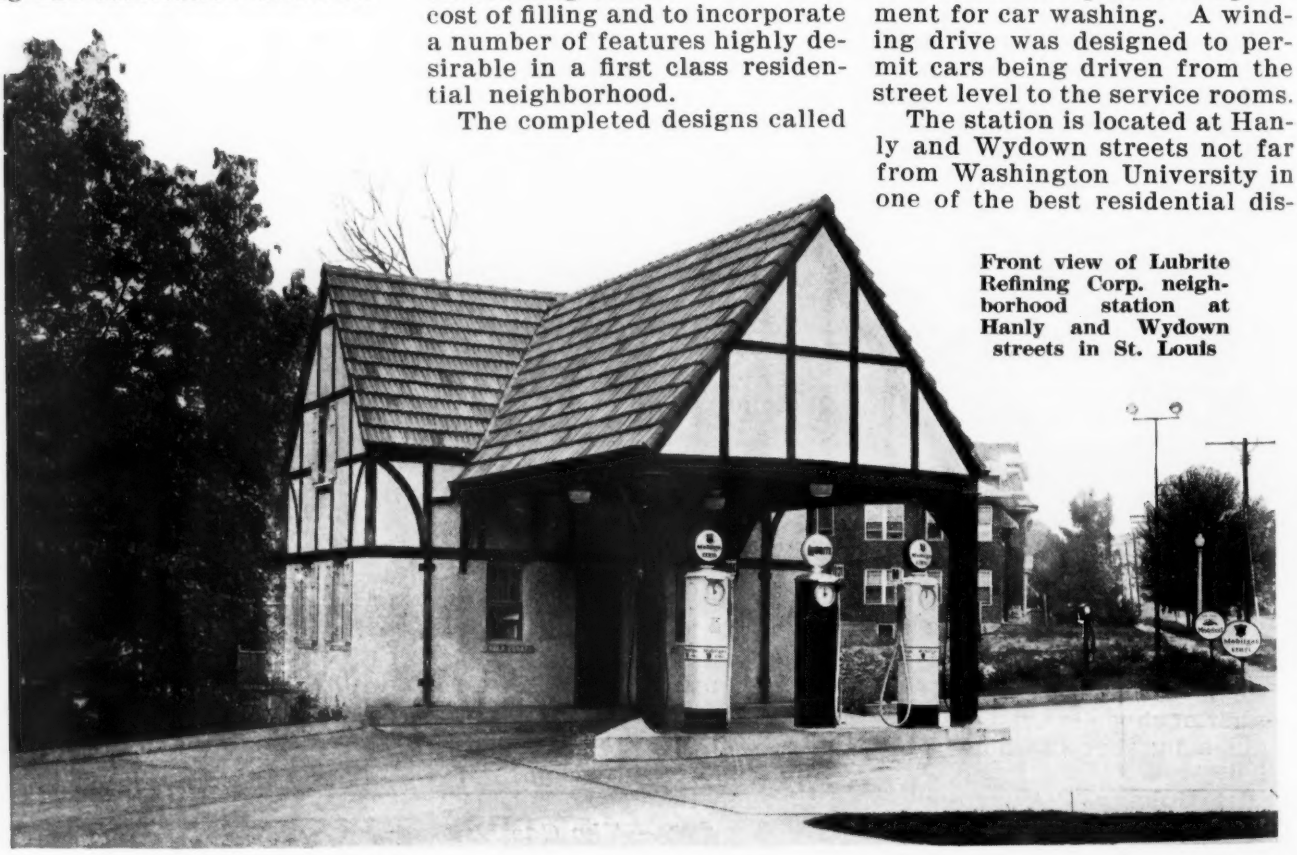
Side view showing winding drive down to lubrication and wash rooms

A CORNER lot sloping sharply back from the sidewalk gave the Lubrite Refining Corp. an opportunity to develop a unique neighborhood sales station with washing and lubrication facilities.

Ordinarily confronted with such a site the station designer would begin figuring the cost of bringing it to the pavement grade. In this case the designers saw an opportunity to save on building cost as well as the cost of filling and to incorporate a number of features highly desirable in a first class residential neighborhood.

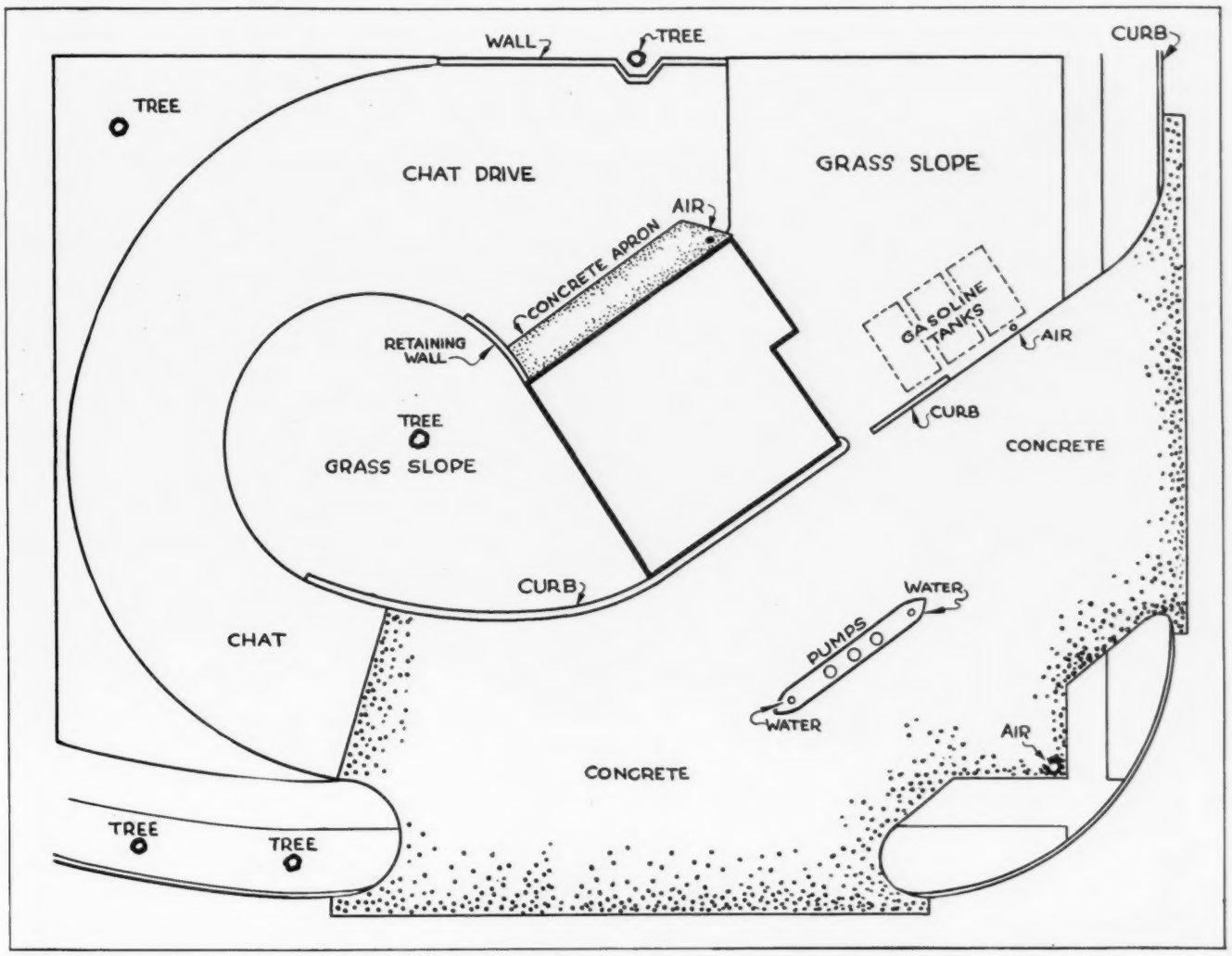
The completed designs called for a sales room and open-air porch waiting room on the street level. Below, on the ground level at the rear of the lot space was provided for an enclosed lift for lubrication service and a separate compartment for car washing. A winding drive was designed to permit cars being driven from the street level to the service rooms.

The station is located at Hanly and Wydown streets not far from Washington University in one of the best residential dis-



Front view of Lubrite Refining Corp. neighborhood station at Hanly and Wydown streets in St. Louis

ADVERTISING PAGES REMOVED

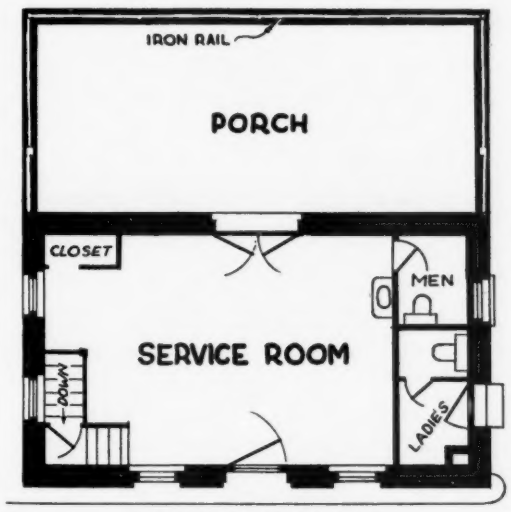


Ground layout of Lubrite 2-story service station

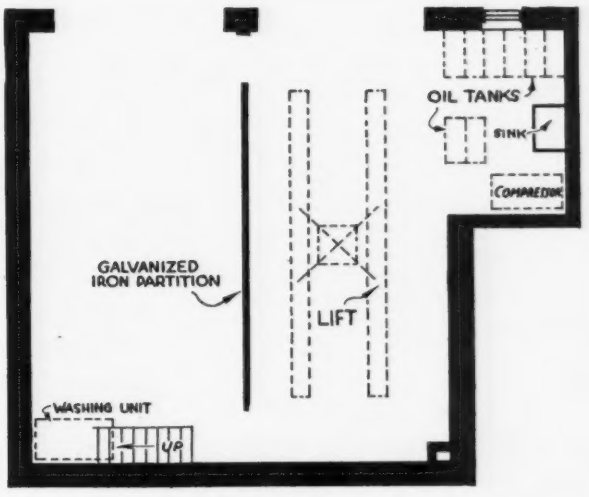
tricts in St. Louis. A large proportion of the station's customers are women who have the car washed and lubricated during the day.

For these customers the porch at the rear of the sales room shaded by an overhanging tile roof and by a large oak tree, has been an attraction. Easy chairs on this porch often are occupied during the slack hours in the middle of the morning and in the afternoon and early evening. The porch is enclosed fully by a wrought iron railing so that the children cannot fall. Entrance is through the immaculate sales room from the gasoline service drives.

A stairway leads down from



FIRST-FLOOR-PLAN



BASEMENT PLAN

Silent! Fully enclosed

—*built by Curtis for car washing*

When it comes to choosing a car washer, the above statement will become more and more important to you as you examine Curtis construction and see what it means. Curtis takes the stand that car washing work requires pumping results that cannot be secured except from a pump unit specifically built for that work.

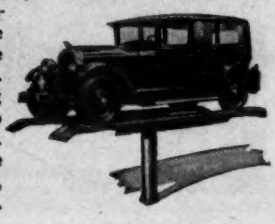
CURTIS AUTO SERVICE EQUIPMENT

Curtis Compressed Air Washer not only washes more cars cleaner than any other power washer, but renders a complete cleaning service. Operates cleaning attachments and pneumatic tools, furnishes air for tire inflation and for auto lifts, etc. New features are: Timken equipped Curtis duplex compressor [20 cu. ft. capacity]; more compact mounting; reduced weight. Maximum cleaning action without excessive water pressure.

Curtis Timken Bearing Compressor has Timken tapered roller bearings. Automobile type "V" belt drive, automatic centrifugal unloader. Universal motor mounting. All steel base. Improved "CentroRing" oiling system. Painted in red and black

Curtis Air Stands—Reel and Tower types with or without water.

Curtis Hydraulic Lift increases your profits because it [1] attracts customers; [2] cuts time-cost. Inspecting, Lubricating and repairing done in half time. Lets the customer see the work. This is the *safe* lift for you and for the car. Lift always held in position by positive oil lock. Large diameter plunger. Flush stuffing box design; no pits or recesses. Roll-on or free wheel type. Lic., by Lunati patents.



Self-Oiling!

—not an adapted pump!

Curtis Silent Hydraulic is Curtis built throughout for its job, not an adapted sprayer or industrial pump.

Triplex pump: Because the pump has 3 cylinders, it provides constant, steady, high-pressure, without pulsation or jerky action, as with one or two cylinder types. This 3-cylinder large plunger capacity also permits slow speed. Therefore, no racking strain from high speed.

Fully enclosed construction permits automobile type of flooded self-oiling. An endless chain carries oil to a felt lined pan at the top where it is fed by gravity, constantly drenching each friction point. No oil or grease cups to require daily attention. High and low level oil filling gauge, only one place to oil. Completely lubricated from 60 to 90 days without attention.

Outside packed plungers with non-binding ball and socket glands, adjustable without removing a single part. No inaccessible cup leathers on the plungers to wear and require constant replacement and no porcelain-lined cylinders to check and flake. 3⅝ in. crankshaft. Four-bearings, not the usual two or three.

Silent "V" Belt Drive, eliminating noisy chains and shutdowns from broken chains and sprockets. The frame is all metal, so there is no wood to rot.

An automatic governor regulates the pressure, prevents the possibility of pump becoming air bound. Therefore, can be connected direct to water line without danger of "water hammer" or blowing out plumbing fixtures.

Self-closing nozzle has handy spring lever control that can be locked in either body or chassis wash position. Nozzle disc of hardened, rustless steel, not quick wearing material, as in other makes. Bronze pump valves and bronze seats easily cleaned, inspectable and renewable.

Actual records show that the Curtis Washer will pay for itself out of increased business and lowered cost in from 5 to 15 weeks. Send for booklet "Super-Service Profits", and for Curtis Washer Catalog, which give complete details of its superior construction.

CURTIS

St. Louis

Curtis Pneumatic Mchy. Co.,
1965 Kienlen Ave., St. Louis—518X Hudson Term., N. Y.
Please send catalog and information about [State product you are interested in]_____

Name_____

Address_____

CARE WILL SAVE YOUR CAR

the sales room to the greasing and washing rooms below in case the customer wants to watch the work being done. In the greasing room the attendant is fully informed about the special greases used for lubricating water pumps, universal joints, wheel bearings, steering gear, shackles, distributor, etc. He is able to describe the differences in each grease and why it is the best type for the job it has to do.

To keep the paving below the lubrication lift clean the station attendant has spread a thin layer of sawdust under it. This is kept raked smooth and changed when necessary. Oil tanks and compressor are in a small alcove beside the lift.

On the opposite side of a galvanized iron partition is the wash room. The 350-pound pressure washer is housed under the stairway leading to the sales room above.

The station is built of cream stucco, half timbered. The roof is of red tile. Like all stations built by the Lubrite in the best residential districts the architecture is pleasing and the signs are not offensively apparent.

Accompanying photographs and drawings illustrate the ground and station layouts and the building design and surroundings.

Buys North Carolina Jobber

RICHMOND, Va.—Its own district plant in Western North Carolina will be operated by the Sinclair Refining Co. through its purchase recently of the Koon Oil Co., Asheville, N. C., formerly a distributor of Sinclair products. Then service stations were included. A bulk plant will be erected by Sinclair shortly.

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland, has published a 52-page bulletin describing the various types of its mechanically operated fluid meters and auxiliary equipment for their installation. Chart records showing results from Bailey meters on various processes are included, together with orifice and flow nozzle location, calibration, pulsating flow, special conditions and application.

SPECIFICATIONS *and* DIMENSIONS *at a* GLANCE

TOKHEIM *Quality* MOTOR OIL

Storage and Dispensing Units

	CUT No.	STYLE	PUMP CAPACITY	TANK CAPACITY	WIDTH OR DIAMETER	LENGTH	HEIGHT OF TANK	HEIGHT OVERALL	EQUIPMENT
1	463	Rectangular	Quart	30 Gallons	10⅛"	22⅛"	33"	49¼"	AUTOMATIC SPRING RETURN DRIP TUBE
	433	Rectangular	Quart	30 Gallons	10⅛"	22⅛"	33"	49¼"	Anti-Drip Nozzle
2	443	Round	Quart	64 Gallons	23⅛"		36¾"	53"	Anti-Drip Nozzle
	467	Round	Quart	64 Gallons	23⅛"		36¾"	53"	AUTOMATIC SPRING RETURN DRIP TUBE
3	446	Square	Quart	67 Gallons	22⅛"	25⅛"	28¾"	45¾"	Anti-Drip Nozzle
	456	Square	Quart	67 Gallons	22⅛"	25⅛"	28¾"	45¾"	AUTOMATIC SPRING RETURN DRIP TUBE
4	438	Rectangular	Quart	62 Gallons	13⅛"	29⅛"	39"	55¼"	Anti-Drip Nozzle
	464	Rectangular	Quart	62 Gallons	13⅛"	29⅛"	39"	55¼"	AUTOMATIC SPRING RETURN DRIP TUBE
5	466	Round	Quart	30 Gallons	16¾"		33"	49¼"	AUTOMATIC SPRING RETURN DRIP TUBE
	437	Round	Quart	30 Gallons	16¾"		33"	49¼"	Anti-Drip Nozzle
6	461	3-Compartment Wheel Tank	Quart	25 Gallons for Each Compartment	27¾"	45¾"	23"	48½"	Anti-Drip Nozzle
	471	3-Compartment Wheel Tank	Quart	25 Gallons for Each Compartment	27¾"	45¾"	23"	48½"	AUTOMATIC SPRING RETURN DRIP TUBE
7	490	Barrel Pump	Quart	Side Discharge				19¾"	Anti-Drip Nozzle
	492	Barrel Pump	Quart	Front Discharge				19¾"	Anti-Drip Nozzle
8	493	Barrel Pump	Quart	Front Discharge With Can Rest				19¾"	Anti-Drip Nozzle
	491	Barrel Pump	Quart	Side Discharge With Can Rest				19¾"	Anti-Drip Nozzle
9	470	2-Compartment Wheel Tank	Quart	25 Gallons for Each Compartment	27¾"	31¾"	23"	48½"	AUTOMATIC SPRING RETURN DRIP TUBE
	460	2-Compartment Wheel Tank	Quart	25 Gallons for Each Compartment	27¾"	31¾"	23"	48½"	Anti-Drip Nozzle

All Tokheim Motor-Oil Tanks are constructed of the highest grade blue annealed pickled steel. Pump and fill openings are provided with extra generous flanges *drawn* from the tank head, insuring protection to the contents against dust, dirt, and water. Heads and sidewalls reinforced to prevent weaving and bulging under strain. Thoroughly tested under pressure before shipment. All Tokheim Motor-Oil Dispensing Pumps are of the totally enclosed type, equipped with cut steel racks and pinions to insure easy operation and long life. Seamless steel measuring cylinder promotes accurate measurement. Pumps discharge quart. Furnished with Anti-Drip Nozzles, or Automatic Spring Return Drip Tubes, at your option.

Use This Specification Chart in Selecting Your Motor-Oil Storage Purchases for 1931. Write for the Tokheim schedule of Prices Today!

TOKHEIM OIL TANK AND PUMP COMPANY

FORT WAYNE, INDIANA

Crude Production by Fields

By Telegraph—Daily average gross output, by fields in U. S., for week ending with dates below as compiled by A. P. I.

PRODUCTION SUMMARY

	Dec. 6	Nov. 29
Production east of Rockies	1,628,850	1,666,000
Decrease		37,150
Total production in U. S.	2,229,250	2,265,900
Decrease		36,650
Crude oil imports	239,430	142,000
Increase		97,430
Total new crude supply	2,468,680	2,407,900
Increase		60,780

OKLAHOMA

	Dec. 6	Nov. 29
Allen Dome	12,250	12,250
Asher	800	900
Asher, West	8,900	13,750
Blackwell	2,200	2,350
Bowlegs	13,000	13,250
Braman	1,900	2,050
Bristow-Slick	10,600	12,100
Burbank	13,000	13,650
Carr City	12,050	11,550
Cromwell	5,900	6,200
Cushing	12,050	12,100
Davenport	850	900
Duncan Dist.	6,100	6,600
Earlsboro	13,950	16,650
Earlsboro, East	17,050	16,800
Earlsboro, So.	7,950	8,650
Fox	800	800
Garber	4,350	4,400
Graham	2,500	2,600
Healdton	10,000	10,000
Hewitt	5,300	5,400
Hubbard	1,000	1,050
Konawa	11,000	12,950
Little River	23,500	23,850
Little River, East	11,250	10,750
Logan Co.	3,200	3,150
Maud	2,500	3,000
Mission	4,350	7,050
Oklahoma City	87,300	92,800
Okmulgee, No.	8,000	9,300
Okmulgee, So.	5,200	6,000
Osage (Outside Burbank)	23,150	24,450
Papoose	2,100	2,250
Pearson	450	500
Sasakwa	4,500	4,550
St. Louis	20,050	21,550
Scholem-Alechem	10,000	9,200
Searight	5,500	6,250
Seminole	12,900	13,700
Seminole, East	1,900	1,950
Thomas	400	400
Tonkawa	3,800	4,050
Wewoka	4,700	4,800
Yale-Jennings	5,150	5,400
Others	38,500	45,050
Total, Okla.	451,900	486,950
Decrease		35,050

KANSAS

Augusta-Fox Bush	2,500	2,650
Churchill	2,950	3,400
El Dorado-Towanda	12,700	13,650
Florence-Covert	750	950
Greenwood Co.	15,950	17,000
Oxford	2,100	2,350
Peabody-Elbing	2,150	2,300
Rainbow Bend	950	1,000
Russell	2,800	2,800
Sedgwick	22.950	24,000
Voshell	13,300	6,550
Others	26,000	31,000
Total, Kans.	105,100	107,650
Decrease		2,550

NORTH LOUISIANA

Caddo, light	8,450	8,600
Caddy, heavy	2,850	2,800
Cotton Valley	1,850	1,850
De Soto and Red River	2,750	2,800
Haynesville	5,200	5,250
Holly	950	900
Homer	3,350	3,350
Sarepta Carterville	2,150	2,250
Urania	5,300	5,300
Zwolle	9,650	9,400
Others	1,650	1,700
Total, N. La.	44,150	44,200
Decrease		50

ARKANSAS

Champagnolle	3,400	3,450
El Dorado	3,900	3,900
Lisbon	900	900
Nevada	1,050	1,050
Smackover, light	4,900	4,800
Smackover, heavy	35,350	35,700
Stephens	900	900
Others	1,100	1,200
Total, Ark.	51,400	51,900
Decrease		500

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,000	2,050
Elk Basin	800	700
Grass Creek	2,000	2,050
Labarge	1,950	1,450
Lance Creek	200	150
Lost Soldier	4,350	4,400
Oregon Basin	3,200	3,100
Rock River	2,150	2,150
Salt Creek	29,400	26,600
Others	3,600	3,650
Total, Wyo.	49,650	46,300
Increase		3,350

Montana

Cat Creek	1,100	1,150
Pondera	1,650	1,700
Sunburst	4,100	3,550
Others	50	50
Total, Mont.	6,900	6,450
Increase		450

Colorado

Florence	400	550
Fort Collins	1,150	1,150
Moffat (Craig)	950	1,150
Others	1,500	1,350
Total, Colo.	4,000	4,200
Decrease		200

New Mexico

Artesia	750	750
Bal. Eddy Co.	200	150
Hobbs High	31,050	37,050
Bal. Lea Co.	7,400	6,600
Hogback	450	450
Rattlesnake	1,100	1,000
Table Mesa	100	100
Total, N. M.	41,050	46,100
Decrease		5,050
Total, Rocky Mountain	101,600	103,050
Decrease		1,450

TEXAS (OUTSIDE GULF COAST)

Panhandle District

Carson Co.	6,350	5,600
Gray Co.	54,200	53,100
Hutchinson Co.	15,200	14,250
Wheeler Co.	600	400
Others	300	300
Total, Panhandle Tex.	76,650	73,650
Increase		3,000

North Texas

Archer Co.	12,400	13,350
Burkburnett	7,350	7,600
Electra	9,600	11,000
Iowa Park and K. M. A.	4,150	4,400
Montague-Cooke	8,550	9,300
Wilbarger	16,850	16,950
Others	1,650	1,750
Total, N. Tex.	60,550	64,350
Decrease		3,800

West Central Texas

Brown Co.	4,500	4,950
Callahan Co.	1,800	3,000
Coleman Co.	2,050	2,650
Eastland-Desdemona	4,350	4,900
Jack Co.	1,550	1,950
Palo Pinto Co.	350	450
Shackleford Co.	4,500	5,100
Stephens Co.	4,650	5,350
Throckmorton Co.	600	700
Young Co.	14,400	13,400
Others	1,700	1,700
Total, West Cent. Tex.	40,450	44,150
Decrease		3,700

West Texas

Crane and Upton Co.'s	37,500	35,050
Crockett Co.	1,950	1,900
Ector Co.	7,450	7,950
Howard Co.	24,450	27,850
Jones Co.	1,350	1,400
Mitchell and Scurry Co.'s	2,050	2,100
Reagan Co.	24,800	25,150
Winkler Co.	56,400	54,850
Yates	100,200	103,450
Bal. Pecos Co.	4,000	4,100
Others	6,000	6,400
Total, West Texas	266,150	270,200
Decrease		4,050

East Central Texas

Boggy Creek	2,600	2,100
Corsicana-Powell	5,300	5,250
Currie	300	300
Mexia	3,900	3,850
Nigger Creek	150	150
Richland	150	150
Van Zandt	27,700	27,500
Wortham	600	600
Others	200	200
Total, East Cent. Tex.	40,900	40,100
Increase		800

Southwest Texas

Chapman Abbot	6,100	6,000
Dale	250	250
Darst Creek	38,600	29,650
Laredo Dist.	14,750	14,750
Luling	9,650	9,500
Lytton Springs	700	700
Salt Flat	15,300	16,100
Somerset	1,300	1,300
Others	600	600
Total, So. W. Texas	87,250	78,850
Increase		8,400
Total, Texas (Outside Gulf Coast)	571,950	571,300
Increase		650

GULF COAST

Coastal Texas

Barbers Hill	24,300	22,750
Batson	1,100	1,100
Big Creek	3,100	3,300
Blue Ridge	1,600	1,600
Boling	800	900
Damon Mound	700	700
Esperson	2,850	2,800
Fannett	600	550
Goose Creek	4,400	4,350
Hankamar	2,100	1,850
Hull	7,800	7,850
Humble	12,350	12,900
North Dayton	900	900
Orchard	2,000	2,200
Orange Co.	1,900	2,000
Pettus	8,400	8,450
Pierce Junct.	9,250	9,500
Port Neches	1,450	1,500
Raccoon Bend	8,700	8,750
Refugio Co.	27,500	27,300
Saratoga	1,200	1,200
Somerville	1,500	1,550
Sour Lake	2,100	2,100
So. Liberty	2,800	2,800
Spindletop	13,600	13,600
Sugarland	12,000	12,000
West Columbia	4,800	4,900
Others	2,250	2,200
Total, Coastal Texas	162,050	161,600
Increase		450

Coastal Louisiana

Edgerly	400	400
Evangeline	2,000	2,100
Hackberry, East	3,900	3,950
Hackberry, Old	900	900
Lake Barre	2,100	2,200
Lockport	4,300	4,700
Port Barre	2,250	2,250
Sulphur Dome	2,300	2,900
Vinton	5,300	5,400
White Castle	1,050	1,050
Others	3,500	3,500
Total, Coastal Louisiana	28,000	29,350
Decrease		1,350
Total, Gulf Coast	190,050	190,950
Decrease		900

CALIFORNIA

Dominguez	10,000	10,000
Elwood-Goleta	35,000	35,300
Huntington Beach	27,200	27,000
Inglewood	15,300	15,500
Kettleman Hills	26,500	26,000
Long Beach	94,700	96,000
Midway-Sunset	59,000	59,000
Playa del Rey	44,000	42,000
Santa Fe Spgs.	93,600	94,000
Seal Beach	17,800	17,700
Ventura Ave.	48,300	48,400
Others	129,000	129,000
Total, Calif.	600,400	599,900
Increase		500

Eastern

(Not including Michigan)	104,000	101,000
Increase		3,000

Michigan

Mt. Pleasant	6,500	6,650
Muskegon	2,100	2,200
Saginaw	100	150
Total, Mich.	8,700	9,000
Decrease		300

Compilation Of Mid-Continent Refinery Operations

All Rights Reserved to the National Petroleum Publishing Co.

Mid-Continent Refinery Operations, Week Ended Dec. 5 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Dec. 5
Plants Reporting	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)	94,500	161,700	106,100	82,000	77,000	521,300
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs	42,032 — 24.9	98,004 — 9.2	63,999 — 3.4	26,609 — 13.8	33,475 — 18.0	264,119 — 12.5
Da. Av. Other Oils	6,983 — 21.3	1,217 — 45.5	2,820 + 62.9	4,471 + 12.1	15,109 + 11.0	30,600 + 0.5
GASOLINE—Gallons						
Stocks, Nov. 28	17,773,000	37,668,000	29,447,000	11,927,000	9,315,000	106,130,000
Prod. 11-28 to 12-5	8,274,000 — 22.9	16,013,000 — 9.8	10,139,000 + 10.6	3,647,000 — 3.7	4,761,000 — 13.9	42,834,000 — 8.7
Ship. 11-28 to 12-5	7,518,000 — 0.01	13,645,000 — 11.5	9,905,000 + 16.6	4,390,000 + 13.5	5,404,000 + 3.6	40,862,000 + 0.9
Stocks, Dec. 5	18,529,000 + 4.3	40,036,000 + 6.3	29,681,000 + 0.8	11,184,000 — 6.2	8,672,000 — 6.9	108,102,000 + 1.9
Ratio Sales to Prod.	90.9%	85.2%	97.7%	120.4%	113.5%	95.4%
KEROSINE—Gallons						
Stocks, Nov. 28	10,094,000	13,724,000	2,185,000	16,000	418,000	26,437,000
Prod. 11-28 to 12-5	1,486,000 — 19.0	1,906,000 — 4.2	1,008,000 — 7.6	26,000 + 44.4	222,000 — 51.2	4,648,000 — 13.7
Ship. 11-28 to 12-5	1,109,000 — 8.6	1,697,000 + 12.0	1,245,000 + 3.0	27,000 + 92.9	404,000 + 15.4	4,482,000 + 4.2
Stocks, Dec. 5	10,471,000 + 3.7	13,933,000 + 1.5	1,948,000 — 10.8	15,000 — 6.2	236,000 — 43.5	26,603,000 + 0.6
Ratio Sales to Prod.	74.6%	89.0%	123.5%	103.8%	182.0%	96.4%
STOVE DISTILLATE—Gallons						
Stocks, Nov. 28	4,294,000	8,124,000	1,060,000	63,000	380,000	13,921,000
Prod. 11-28 to 12-5	264,000 — 8.3	1,209,000 — 17.8	333,000 — 16.1	70,000 +141.4	32,000 +300.0	1,908,000 — 13.0
Ship. 11-28 to 12-5	551,000 +142.7	2,524,000 +181.1	568,000 +305.7	33,000 — 63.7	24,000 — 29.4	3,700,000 +192.7
Stocks, Dec. 5	4,007,000 — 6.7	6,809,000 — 16.2	825,000 — 22.2	100,000 + 58.7	388,000 + 2.1	12,129,000 — 12.9
Ratio Sales to Prod.	208.7%	208.8%	170.6%	47.1%	75.0%	193.9%
GAS OIL—Gallons						
Stocks, Nov. 28	3,179,000	36,961,000	3,335,000	5,554,000	7,253,000	56,282,000
Prod. 11-28 to 12-5	722,000 — 6.5	2,411,000 +128.3	700,000 — 42.8	480,000 — 13.4	2,216,000 + 15.6	6,529,000 + 18.2
Ship. 11-28 to 12-5	815,000 — 29.3	2,098,000 + 25.5	737,000 + 63.4	374,000 — 25.1	1,680,000 + 13.0	5,704,000 + 8.3
Stocks, Dec. 5	3,086,000 — 2.9	37,274,000 + 0.8	3,298,000 — 1.1	5,660,000 + 1.9	7,789,000 + 7.4	57,107,000 + 1.5
Ratio Sales to Prod.	112.9%	87.0%	105.3%	77.9%	75.8%	87.4%
FUEL OIL—Gallons						
Stocks, Nov. 28	26,685,000	48,793,000	69,664,000	18,713,000	15,973,000	179,828,000
Prod. 11-28 to 12-5	3,200,000 — 28.9	5,882,000 — 14.4	7,912,000 + 19.6	3,467,000 — 21.5	4,397,000 — 1.0	24,858,000 — 7.4
Ship. 11-28 to 12-5	4,479,000 — 9.4	5,131,000 — 20.4	6,343,000 — 6.8	5,268,000 + 4.4	4,981,000 + 15.3	26,202,000 — 4.9
Stocks, Dec. 5	25,406,000 — 4.8	49,544,000 — 1.5	71,233,000 + 2.3	16,912,000 — 9.6	15,389,000 — 3.7	178,484,000 — 0.7
Ratio Sales to Prod.	140.0%	87.2%	80.2%	151.9%	113.3%	105.4%

Gasoline Produced by Various Methods, Week Ended December 5

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	4,404,000	53.2	10,045,000	62.7	6,444,000	63.6	3,006,000	82.4	1,527,000	32.1	25,426,000	59.4
Cracked	3,158,000	38.2	4,793,000	29.9	1,759,000	17.3	471,000	12.9	2,383,000	50.1	12,564,000	29.3
Natural	712,000	8.6	1,175,000	7.4	1,936,000	19.1	170,000	4.7	851,000	17.8	4,844,000	11.3
Total	8,274,000		16,013,000		10,139,000		3,647,000		4,761,000		42,834,000	

+ or — columns are % changed over previous week

12.5% Cut Made in Mid-Continent Crude Runs

Staff Special—By Telegraph

TULSA, Dec. 9

CRUDE runs to stills at Mid-Continent refineries that report operating statistics to NATIONAL PETROLEUM NEWS weekly, were reduced 37,755 barrels daily average, or 12.5 per cent, in the week ended Dec. 5. Every district reduced its runs. Reduction in Kansas was 24.9 per cent, in Oklahoma 9.2 per cent, in Texas 3.4 per cent, West Texas 13.8 per cent, and Louisiana-Arkansas 18 per cent.

The crude oil run reduction caused a fall of 4,100,000 gallons in gasoline output. Texas was the only district that increased its gasoline output.

Gasoline shipments were 300,000 gallons more than in the preceding week for the whole district, but gasoline stocks rose 2,000,000 gallons. West Texas and Louisiana-Arkansas districts were the only districts that

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Dec. 5. Change in stocks figures from Nov. 7.

GASOLINE

	Gallons
Production	186,402,000
Shipments	174,721,000
Net change in stocks	+11,681,000
Ratio sales to production	93.7%

KEROSINE

Production	21,750,000
Shipments	18,926,000
Net change in stocks	+2,824,000
Ratio sales to production	87.0%

STOVE DISTILLATE

Production	8,885,000
Shipments	7,714,000
Net change in stocks	+1,171,000
Ratio sales to production	86.3%

GAS OIL

Production	24,125,000
Shipments	24,948,000
Net change in stocks	—823,000
Ratio sales to production	103.4%

FUEL OIL

Production	105,338,000
Shipments	113,688,000
Net change in stocks	—8,350,000
Ratio sales to production	107.9%

drew on stocks.

Kerosine stocks rose 270,000 gallons although production was less and shipments more than in the preceding weeks.

Distillate stocks were lowered 1,700,000 gallons when shipments almost tripled. There was a small increase in gas oil stocks. Fuel stocks fell 1,300,000 gallons.

Airey Suggests Advance In Crude Prices

NEW YORK, Dec. 6.—That the oil industry follow the example of the copper and steel industries, and advance the prices for crude oil, in the interests of producers who have made possible the curtailment of production is suggested by Richard Airey, Asiatic Petroleum Co., New York.

Mr. Airey says as follows: "Copper, steel, why not oil? The great copper and steel industries have taken the initial step to bring about an improvement in their condition, why not oil?

"It is the firm opinion of the Royal Dutch-Shell group that the producers who have made possible the great curtailment of production already accomplished and the need for still further curtailment should be compensated by higher prices and not penalized by a reduction.

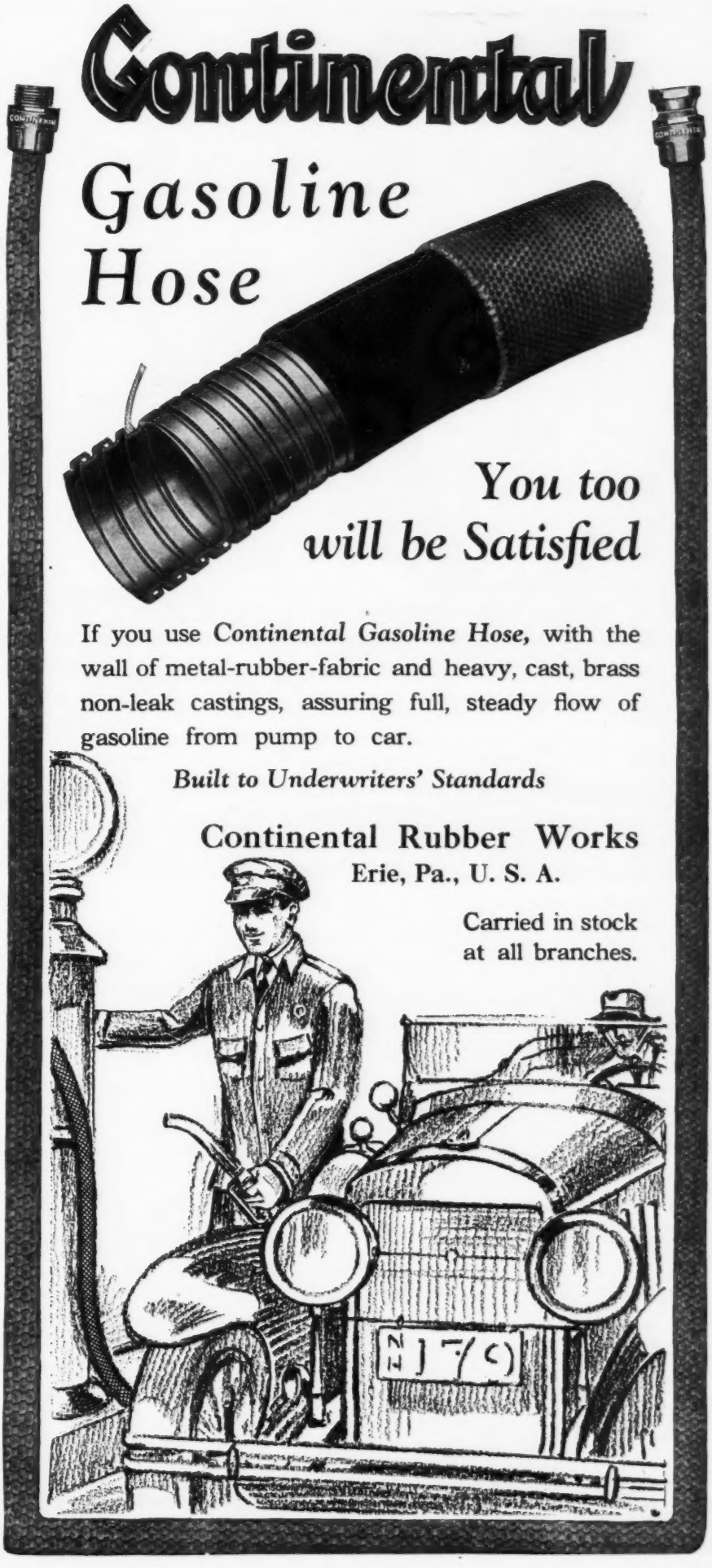
"It has been said we have put out feelers for a joint price raise. This is not correct. We have made known our opinion through the press and the danger we fear that the curtailment program will be upset by the small producers being brought to the edge of ruin and being compelled to increase production to live. Trade advices show that the consumption of gasoline is declining therefore crude oil production and refinery runs should be further curtailed.

"We are following the United States movement by curtailing in Venezuela where November 1 our production was 192,500 barrels daily and is now 156,000 barrels."

Duff Heads Corrosion Sub-Committee

NEW YORK.—R. L. Duff, Standard Oil Development Co., Elizabeth, N. J., has been appointed chairman of the sub-committee on metal test sample corrosion of the committee on corrosion of refinery equipment. These committees are units of the American Petroleum Institute's division of refining.

CLEVELAND—Harvey S. Plummer has joined the Service Station Equipment Co., Conshohocken, Pa., and will contact with the company's eight branch offices.


Continental
Gasoline
Hose
You too
will be Satisfied
If you use Continental Gasoline Hose, with the wall of metal-rubber-fabric and heavy, cast, brass non-leak castings, assuring full, steady flow of gasoline from pump to car.
Built to Underwriters' Standards
Continental Rubber Works
Erie, Pa., U. S. A.
Carried in stock
at all branches.

PETROLEUM JELLY . . . a familiar friend in every household . . . is the same sticky salve that makes motor oils thick and sluggish in winter.

The great Sinclair refineries, with modern refrigerators and separators, remove this paralyzing petroleum jelly from Sinclair Opaline at as low as 60° F. below zero. (Opaline is guaranteed to flow at zero.) With Opaline your customers are not forced to change to "light" motor oils for easy starting in winter!

Opaline is refined from paraffin base crudes according to the Sinclair Law of Lubrication. (Write for booklet explaining this famous Sinclair Law . . . it's a sensational sales builder you shouldn't overlook!)

This is the story and above is the girl who'll carry it into millions of homes from coast to coast. Cash in on the sweeping Opaline sales.

* * *

Send a post card to our nearest office and a Sinclair salesman will tell you all about it. Sinclair Refining Company {Inc.}, New York, Atlanta, Chicago, Fort Worth, Houston, Kansas City. Sinclair Refining Company of Canada, Ltd., Toronto. Sinclair Refining Company of California, Los Angeles.

SINCLAIR OPALINE
REG. U. S. PAT. OFF.
MOTOR OIL

Refinery - Tank Wagon Markets

Domestic Markets Generally Remain Quiet; Export Demand Continues Good

CLEVELAND, Dec. 9

DOMESTIC refined oil markets were generally quiet and without outstanding features the first week of December. Motor fuel prices were lower in most markets as were industrial fuels and lubricating oils also. Domestic heating oils—in excellent position statistically in most sections of the country and all set to push forward—were kept from advancing by the proximity of prices for the lighter burning oils and even of gasoline prices in some markets.

Retail gasoline markets generally were steady. There were a few local price wars but the number was much smaller than is usual when there is the margin between tank car prices and retail prices that there is now quite generally over the country.

Activity in export markets continued on a larger scale than in domestic markets. Although spring buying from foreign countries usually sets in a month or two earlier than domestic buying, it is a little early yet for this type of activity. Consequently the present activity of foreign buyers was looked upon as very encouraging by the export trade. It tended to bear out the beliefs of exporters that foreign refined oil stocks were near the danger point.

The sale of a cargo of stabilized natural gasoline by a Mid-Continent refiner, the sale of a mixed cargo of refined oils by a Gulf supplier and numerous inquiries received by the Gulf and Pacific coast trade made up most of the week's export business.

Jobber buying in domestic markets was largely on a hand-to-mouth basis. Tank car prices for gasoline remained fairly steady in Pennsylvania and Oklahoma but were from 0.125 to 0.5 cent lower at Chicago and along the east and west coasts.

Spasmodic periods of cold weather in most districts west of the Rockies have shown that burning oils were in for a good season and that the zero cold test oils were none too plentiful. Prices in this division of the refined oil list were generally steady.

Pennsylvania neutral oils were active and relatively scarce for prompt shipment but cylinder stocks in this market and also in the Mid-Continent were quiet with prices lower.

Wax continued active and prices advanced an additional 0.125 cent in all markets except the Mid-Continent. The activity of foreign buyers caused a revival of domestic interest in wax, according to reports.

Chicago Market Quiet; Gasoline Quoted Lower

Staff Special

CHICAGO, Dec. 6

THE Chicago resale market passed another quiet week and spot gasoline prices were off 0.125 to 0.25 cent. On the other hand, the weather over the middle west remained cold enough to insure a steady movement of the zero grades of gas and fuel oils and prices for these products were generally unchanged.

Practically all sellers reported only a nominal spot demand for gasolines, although several refiners, who do most of their business on contracts, said they were enjoying a satisfactory demand for this season of the year. A number of jobbers said they were buying only enough gasoline to take care of their day to day sales and had let their storage run down in order to show as low an inventory as possible at the end of the year. Several sellers, who have been holding their prices at the average of the high and low of the market, said they had little trouble getting business at these prices whenever they could locate a jobber who needed gasoline.

Offerings of U. S. Motor gasoline still covered a wide range of prices. Two Chicago carlot marketers offered a little Motor at 4 cents for shipment over the remainder of December. On the other hand, a number of refiners continued to ask 5.25 cents but said they were not getting any spot business at this price. Some sales of U. S. Motor were reported Dec. 6 at 4.125 cents, but the bulk of the goods moving apparently commanded prices ranging from 4.25 to 4.625 cents.

Carlot marketers generally reported they were paying 4.125 to 4.25 cents for U. S. Motor gasoline for resale purposes, both in Oklahoma and Texas. Several marketers said they had purchased some goods at 4 cents, mostly in North Texas, and one said he obtained a few cars at 3.875 cents. Others, however, said they were unable to locate any full specification U. S. Motor for prompt shipment at under 4.125 cents.

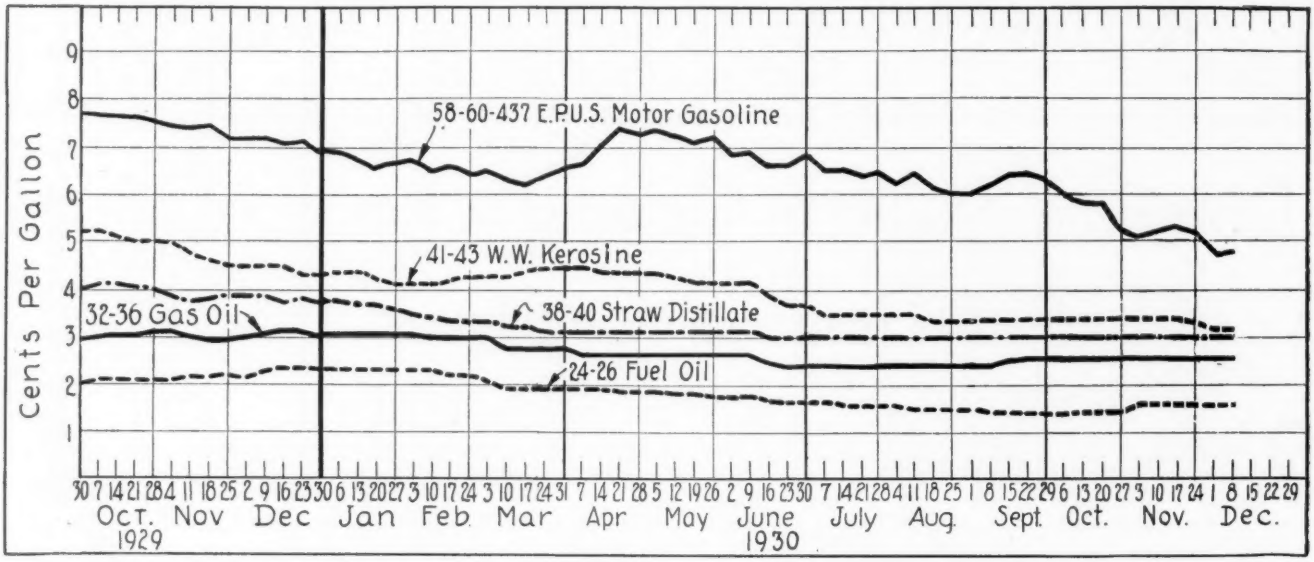
A number of the trade were concentrating their efforts on moving the higher gravity gasolines and reported a better demand for them than for U. S. Motor. Part of this activity was due to the fact that there was only a narrow margin between the offered prices of U. S. Motor, 60-622, 400 and 64-66, 375 e.p. gasolines.

The spot movement of kerosine and distillate was not brisk and prices of the latter product were off 0.125 cent in several quarters. The movement

AS ANNOUNCED in a recent issue of NATIONAL PETROLEUM NEWS, the weighted average method of reporting Oklahoma and Kansas gasoline prices will be discontinued around Jan. 1, 1931.

In order that a definite date which will be satisfactory to the majority may be determined upon, we would appreciate receiving any comments from the trade as soon as possible with reference to existing contracts which may be affected by the change.

Current Prices of Principal Mid-Continent Refined Products


Cents Per Gallon
58-60-437 E.P.U.S. Motor Gasoline
41-43 W.W. Kerosine
38-40 Straw Distillate
32-36 Gas Oil
24-26 Fuel Oil
Oct. Nov Dec Jan Feb Mar Apr May June July Aug. Sept Oct. Nov. Dec.
1929
1930

Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

of distillate on contracts continued fair, however.

Some sellers reported a good demand for low cold test gas and fuel oils, both from spot and contract buyers, while others said their spot movement was not very heavy. There was practically no change in prices for these products.

New Company Will Make Refinery Equipment

NEW YORK, Dec. 8.—A new company to design, construct and engineer process plants and equipment for the oil refining industry has been organized by the American Locomotive Co. It is known as Alco Products, Inc., and is a subsidiary of the former.

Officers of Alco Products, Inc., are: William H. Woodin, chairman, executive committee; William C. Dickerman, chairman, board of directors; Joseph Davis, president; H. R. Swanson, vice president, in charge of engineering; G. T. Jacocks, vice president in charge of sales; F. P. Brent, comptroller; J. O. Hobby, Jr., treasurer; and J. D. Finn, secretary.

The new company will take over the business of Heat Transfer Products, Inc., in addition to making its own equipment. All manufacturing will be at the Dunkirk, N. Y. plant of the American Locomotive Co. This plant occupies about 60 acres of land, has all modern facilities and many shops including foundry, forging, plate, pipe and machine departments.

Mr. Swanson, who will head the engineering department, has had wide experience in the development and engineering of modern refining installations.

March Meeting For Michigan Jobbers

JACKSON, Mich.—The spring convention of the Michigan Oil Men's Association will be held at the Hotel Statler, Detroit, March 11, 12 and 13.

Correction

Price of Grade C bunker oil, for bunkering, tax paid, f.o.b. steamer at Tampico, as of Dec. 8 should be 90 cents, instead of $1.00 as published under Mexican Crude and Bunker oils, in the Gulf Coast Bulk Market, complete seaboard market table, page 114 of this issue. Price will be corrected in Dec. 17 issue.

Pure Penn Has New Sales Head

CLARENDON, PA.—J. R. Phillips, formerly with the Union Oil Co., Warren, Pa., has been appointed general sales manager of the Pure Penn Refining Co. here. The Pure Penn was formerly the Levi Smith Refining Co. It operates a 100 barrel skimming, lube and settling plant here.

Shipments From Southern California

LOS ANGELES, Dec. 3

Bulk petroleum shipments from Southern California ports to Foreign and Atlantic Seaboard ports for week ended Nov. 29 totaled 1,419,956 barrels as compared with 1,066,822 barrels shipped to the same ports for the previous week. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Gas Oil	Fuel	Total
Pacific For.	86,081	142,968	187,833	38,223	.....	382,174	837,279
Atlantic Dom.	.....	125,321	207,552	80,000	.....	.....	412,873
Atlantic For.	.....	167,771	2,033	.....	.....	.....	169,804

Prices 10 Years Ago
Dec. 6, 1920

	Oklahoma	Penna.
58-60 U. S. Motor	19.00-19.50c	23.25-23.50c
80-84 Natural	20.00-21.00c	.....
Kerosine (42-43 Okla.; 47 w. w. Pa.)	8.50-9.00c	13.75-14.50c
Fuel Oil (24-26 Okla.; 36-40 Pa.)	$1.90-$1.95	8.00-8.50c
Crude (Okla. 35-35.9)	$3.50	$6.10
Chicago tank wagon (no state tax)		27.00c

Prices A Year Ago
Dec. 9, 1929

	Oklahoma	Penna.
58-60 U. S. Motor	7.2321c	8.00-9.00c
Grade A Natural	6.625c	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)	4.25-4.75c	6.75-7.25c
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.90-$1.00	4.75-5.00c
Crude (Okla. 35-35.9)	$1.40	$3.05
Chicago tank wagon (including 3c tax)		17.00c

Mid-Continent Refinery Markets

Activity Continues Light in All Districts

Staff Special

TULSA, Dec. 6

THE Mid-Continent refinery market the first week of December showed signs of beginning to drift into the the usual December period of quietness when buyers watch their stocks carefully for inventory purposes.

The market as a whole was featureless. Gasolines marked time with prices experiencing few changes. From a spot market standpoint demand was light but contract shipments continued to move out in fair volume for this season of the year.

Oklahoma and Kansas refiners made virtually no changes in their prices during the week. Gasoline meeting U. S. Motor specifications moved generally at 4.50 to 5 cents in both districts, on a Group 3 freight rate basis. There were a few scattered quotations for this grade at 4.25 to 4.375 cents for resale, but the cars moved direct at those prices were considered too few to be representative of the going market.

At the same time there was some 58-60, 437 e.p. gasoline moved at 4.125 cents and up, direct to the trade, with a few sales to brokers at 4 cents. The amount of this gasoline which would actually meet U. S. Motor specifications was negligible.

North Texas refiners for the most part continued to quote 4.50 to 4.75 cents for U. S. Motor gasoline, but reported little business, other than routine orders. Inquiries were light, and quotations failed to develop orders. These refiners felt keenly the competition from the Panhandle district, which for shipments to many Standard of Indiana territory points has the same freight rate as do the North Texas refiners. Gasoline from the Panhandle district was moved mostly at 4.25 to 4.50 cents, with occasional cars at 4 cents and up.

Arkansas refiners continued to ask 5.25 cents a gallon for gasoline moved into different territory, and reported business fair at that figure. Gasoline shipped north in competition with other districts was moved at prices ranging from 4.50 cents up.

Louisiana refiners declined to recognize the competition from Arkansas plants, and the prevailing quotation for differential haul was 5.50 cents a gallon. The Louisiana refiners, however, were forced to give North Texas district a close scrutiny, because of the fact that the North Texas refiners have been cutting into the southeastern territory business because of the difference in quotations in the two refining districts.

Demand for natural gasolines from regular outlets was about normal the past week, most manufacturers reported, but new business was comparatively scarce. Grade AA reached a 4 cent level, while grades BB and C went to 3.75 to 4 cents, but prices stopped there about the middle of the week, and no reports of lower prices were heard Dec. 5 and 6.

Some buying for shipment to Gulf port points was reported, but not in the volume the manufacturers were accustomed to experience. Little buying for over the month was reported. The Standard Oil Co. of Indiana was reported to have bought 50 cars of gasoline for shipment to its Wood River plant. The gasoline was to move from the Panhandle. The market price was reported paid for the gasoline. The Standard of Indiana has been a reasonably consistent buyer the past few months.

A large manufacturer this week reported the sale of a cargo of stabilized natural gasoline for shipment abroad. The price was not revealed but was understood to have been at a figure which would equal slightly better than 4 cents a gallon for grade AA.

Kerosines were virtually out of the market picture. Demand and production remained comparatively steady but no unusual activity was noted.

Heating distillates were in good demand in several quarters but prices lost a little ground as kerosines continued to push against them.

Zero gas oils were in fair demand but not sufficiently to keep prices on an even keel throughout the week. Losses of 0.125 to 0.25 cent were reported in several quarters. This situation may have been caused in part by the action of a few refiners who had been storing, in beginning to offer their oils in the open market as cold weather was reported more prevalent in the middle west.

Zero fuel oils were in good demand and prices were steady. The ordinary grades of fuel oils, however, lost 2.5 to 7.5 cents a barrel as demand failed to take up the sag. Refiners in all districts reported they had excessive amounts of ordinary cold test fuel oils and had no sizeable outlets, with the result that the oils continued to back up in their storage tanks.

Neutral oils and cylinder stocks were unchanged as far as prices were concerned but demand was light most refiners reported. Wax prices were unchanged at 2 cents a pound for 124-126 white crude scale, but most of the shipments from the Mid-Continent were reported to have been applied against contracts.

A.P.I. Midyear Meetings Announced

NEW YORK, Dec. 8.—The following schedule for its first midyear divisional meetings has been announced by the American Petroleum Institute. Division of Refining, Statler Hotel, St. Louis, April 15 and 16. Division of Marketing, Mayo, Tulsa, May 12 and 13. Division of Production, Baker Hotel, Dallas, June 3 and 4.

Model Oil Inspection Bill to Be Drafted

INDIANAPOLIS, Ind., Dec. 5.—A. N. Bobbitt, former auditor of Indiana and president of the North American Gasoline Tax Conference, has appointed a committee to draft a model oil inspection bill to be presented to the conference at its annual meeting in Denver next September.

Active members of the committee are: DeWitt Billman, Illinois, chairman; E. D. Graham, Oklahoma Corporation Commission; James Duce, oil inspector of Colorado; Seth Wells, oil inspector of Kansas, and James J. Inlow, oil inspection department of Indiana.

Associate members are: Frank E. Packard, Standard Oil Co. of Indiana, and James T. Dortsch, The Texas Co.

Merchandising on Program Of Minnesota Jobbers

MINNEAPOLIS—Two speakers on oil merchandising have been selected for the annual convention of the Minnesota division of the Northwest Petroleum Association, which convenes at the Hotel Radisson here Jan. 14 and 15, according to Elwin E. Hadlick, secretary. They are H. S. Ritchey, of H. S. Ritchey & Co., Minneapolis, sales and advertising counsellor, and Ken Cloud, editor, the "Super Service Station," Chicago.

Mr. Ritchey will talk on "This Problem of Merchandising." He is a member of the National Commission of the International Advertising Association and was at one time national lecturer for the Sheldon School of Salesmanship.

Mr. Cloud will speak on super service stations. Other speakers will be announced later. The annual banquet will be held in the evening of Jan. 14.

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect December 8

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	4.375–5.00	(See note)	4.375–5.00	(See note)	
**Oklahoma	4.25 –4.75		4.25 –4.75		
Kansas	4.75 –5.375				S. O. Neb. & Indiana Territory, etc.
Kansas			5.7500	(Wt. Avg.)	Kansas only.
North Texas	4.125–4.50		4.125–4.625		
West Texas	4.125–4.50		4.125–4.50		
Louisiana-Arkansas	4.75 –5.00				Michigan, Ohio and Indiana.
Louisiana-Arkansas			5.25 –5.50		State or differential haul.
Indiana-Illinois	4.25 –4.75		*		S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

**Price of this 58-60, 437 e.p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Note: No sales reported for the gasoline marked "see note"; prices shown represent majority of quotations only.

Chicago Resale Market

CHICAGO, Dec. 6

ZERO gas and fuel oils were in steady demand in the Chicago market. Movement of spot gasolines remained light. Little change was noticed in heavy oil prices. Gasolines were off 0.125 to 0.25 cent. Sales of U. S. Motor were mostly reported at 4.25 to 4.625 cents, with a few made at 4 cents. Jobbers were buying cautiously in order to keep their storage low for the end of the year inventories.

Following prices represent majority of sales made on Group 3 freight basis, although shipments may originate in other refining districts, such as North and West Texas, Arkansas, Louisiana, Indiana, Illinois, Kentucky, etc.

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
58-60 U. S. Motor, 437 e.p.	4.25 – 4.625	4.375– 4.75	4.50 – 4.75
†56-62 400-437 e.p. anti-knock gasoline	5.00 – 6.25	5.00 – 6.25	5.375– 6.50
60-62 437 e.p. gasoline	4.25 – 4.625	4.50 – 4.75	4.625– 4.875
60-62 400 e.p. gasoline	4.375– 4.75	4.625– 5.00	4.75 – 5.00
64-66 375 e.p. gasoline	5.25 – 5.75	5.50 – 5.75	5.50 – 5.75
68-70 350-360 e.p. gasoline	5.75 – 6.25	6.00 – 6.50	6.00 – 6.50
*Domestic Aviation Gasoline	7.25 – 7.50	7.50 – 7.75	7.50 – 7.75
41-43 w.w. kerosine	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
42-44 w.w. kerosine	3.25 – 3.50	3.25 – 3.625	3.25 – 3.625
38-40 straw distillate	2.75 – 3.00	2.875– 3.00	2.875– 3.00
32-36 ordinary dark gas oil	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 dark zero gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
32-36 straw zero gas oil	2.75 – 2.875	2.75 – 2.875	2.75 – 2.875
28-30 zero fuel oil (per bbl.)	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
28-30 fuel oil (per bbl.)	$0.80 –$0.85	$0.80 –$0.85	$0.80 –$0.85
24-26 fuel oil (per bbl.)	$0.60 –$0.65	$0.60 –$0.65	$0.60 –$0.65
18-22 fuel oil, low sulfur (per bbl.)	$0.50 –$0.55	$0.50 –$0.55	$0.50 –$0.55
18-22 fuel oil, high sulfur zero (per bbl.)	$0.525–$0.60	$0.525–$0.60	$0.525–$0.575
14-16 fuel oil (per bbl.)	$0.425–$0.475	$0.425–$0.475	$0.425–$0.475

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Over 45% benzol equivalent. Prices represent quotations and sales.

Weighted Average Prices

OKLAHOMA

	Dec. 8 No. of Cars	Dec. 8 Price	Dec. 1 No. of Cars	Dec. 1 Price	Nov. 24 No. of Cars	Nov. 24 Price
58-60 U. S. Motor, 437 e.p.	..	4.375–5.00 (See note)	..	4.50 –5.00 (See note)	..	4.625–5.25 (See note)
*58-60 437 e.p. gasoline	..	4.25 –4.75	..	4.375–4.875	..	4.50– 5.00
60-62 437 e.p. gasoline	..	4.625–5.25 (See note)	2	4.6250	..	4.75– 5.25 (See note)
60-62 400 e.p. gasoline	..	5.25 –5.50 (See note)	..	5.25 –5.50 (See note)	1	5.5000
64-66 375 e.p. gasoline	..	5.50 –6.25 (See note)	..	5.50 –6.25 (See note)	..	5.75– 6.25 (See note)

KANSAS

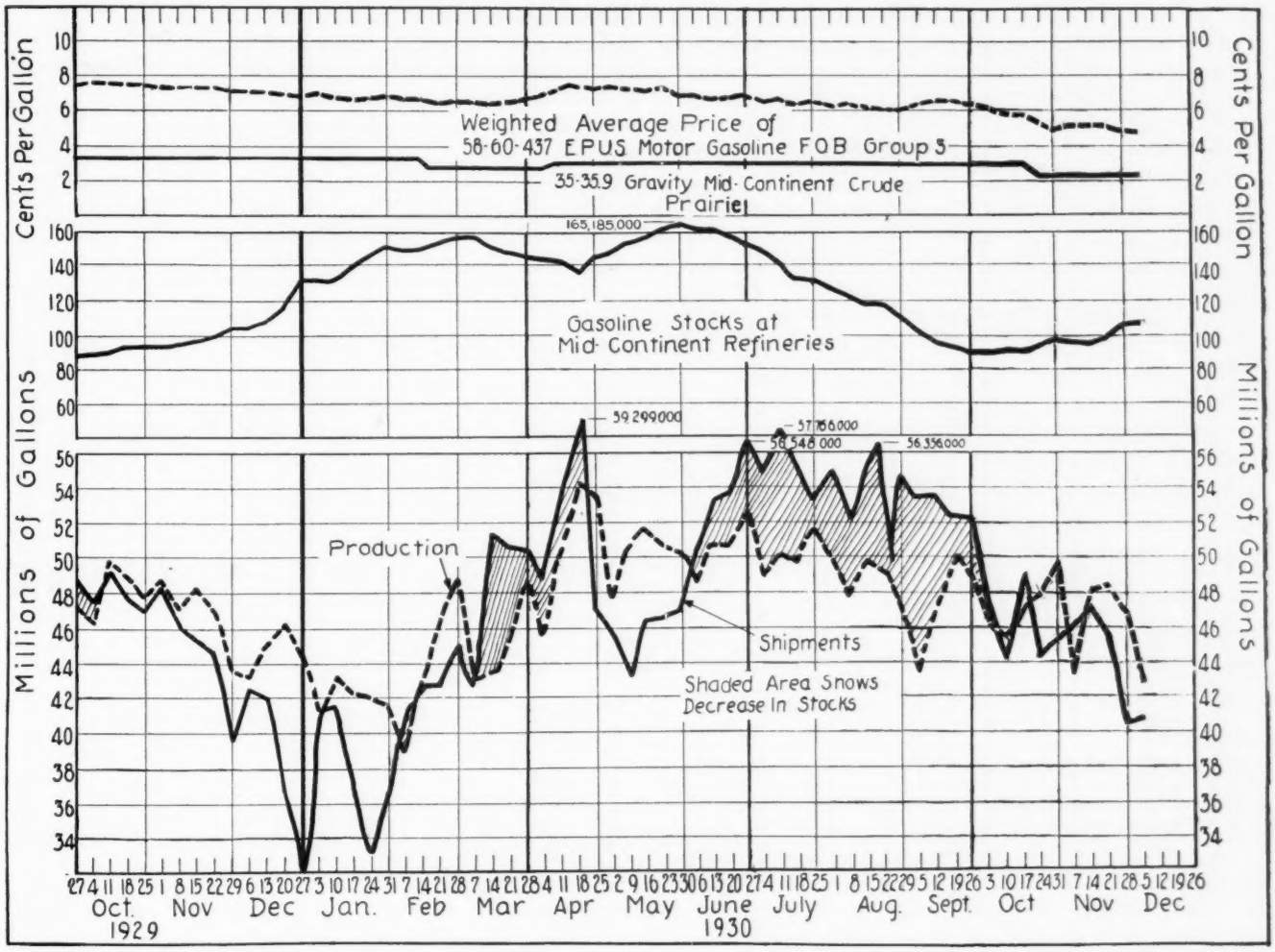
	Dec. 8 No. of cars	Dec. 8 Price	Dec. 1 No. of cars	Dec. 1 Price	Nov. 24 No. of Cars	Nov. 24 Price
58-60 U. S. Motor, 437 e.p.	3	5.7500	15	5.6000	3	5.7500

Note: No sales reported for the gasoline marked "see note" on the dates so marked; prices shown on such dates represent majority of quotations only.

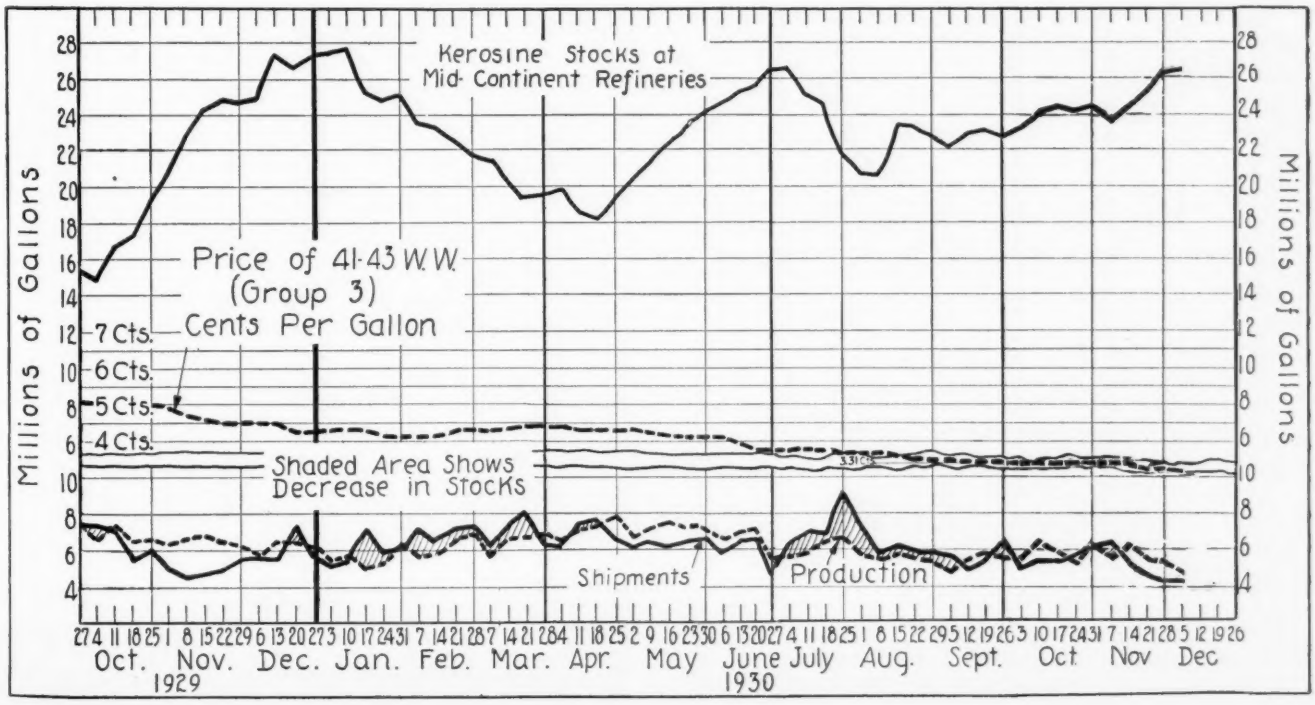
*Prices of this 58-60, 437 e. p. gasoline, which in most instances meets full U. S. Motor gasoline specifications, represents quotations and sales prices of four refiners having 7% of the refining capacity of Oklahoma. These four refiners are not reporting their prices for use in compiling weighted averages on U. S. Motor gasoline.

Barometer of Mid-Continent Refinery Market—Week Ending December 5

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 98



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
48-50 450 e.p. naphtha...	4.75	4.75	4.875– 5.00
50-52 450 e.p. naphtha...	4.75	4.75	4.875– 5.00
56-58 450 e.p. gasoline...	4.375– 4.625	4.50 – 4.75	4.625– 5.00
58-60 450 e.p. gasoline...	4.375– 4.625	4.50 – 4.75	4.625– 5.00
64-66 390 e.p. gasoline...	5.50 – 5.75	5.50 – 5.75	5.50 – 6.00
68-70 350-360 e.p. gasoline	6.00 – 6.25	6.00 – 6.25	6.25 – 6.50
‡Domestic Aviation Gasoline.....	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374°F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	6.25 – 6.50	6.00 – 6.50	6.00 – 6.50
54-56 Naphtha.....	6.25 – 6.75	6.25 – 7.00	6.25 – 7.00
58-60 U.S. Motor 437 e.p.	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
60-62 400-410 e.p. gasoline	6.50 – 7.00	6.50 – 7.00	6.625– 7.25
64-66 390 e.p. gasoline....	7.125– 7.50	7.125– 7.75	7.125– 7.75
68-70 350-360 e.p.....	8.00 – 8.75	8.00 – 8.75	8.00 – 8.75

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.00	9.00	9.00

KANSAS (F. o. b. refinery Kansas destination)

60-62 437 e.p. gasoline....	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
60-62 400 e.p. gasoline....	5.75 – 6.00	5.75 – 6.25	5.75 – 6.25
64-66 375 e.p. gasoline....	6.25 – 6.50	6.50	6.50

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline....	4.00	4.25	4.50
58-60 450 e.p. gasoline....	4.00	4.25	4.50
58-60 U.S. Motor 437 e.p.	4.125– 4.625	4.375– 4.75	4.625– 4.75
60-62 400 e.p. gasoline....	4.75 – 5.00	5.00	5.00 – 5.25
64-66 390 e.p. gasoline....	5.00 – 5.25	5.25	5.25 – 5.50
64-66 375 e.p. gasoline....	5.375– 5.50	5.50	5.50 – 5.75
68-70 350-360 e.p. gasoline	5.75 – 6.00	6.00	6.25 – 6.50

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	4.00	4.25	4.50
58-60 437 e.p. gasoline....	4.00	4.25	4.50
58-60 U.S. Motor 437 e.p. gasoline.....	4.125– 4.50	4.375– 4.625	4.625– 4.75

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p	5.50	5.50	5.50

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	5.25	5.25	5.25

CALIFORNIA (3c tax to be added to California gasoline prices if used n state.)

54-58 U.S. Motor 437 e.p.	7.75 –10.50	8.00 –11.00	8.75 –11.50
54-58 U.S. Motor, for outside state shipment....	7.25 – 8.50	7.50 – 8.50	7.50 – 8.50
58-61 375-400 e.p. gasoline	11.00 –12.00	11.00 –12.00	11.00 –12.00
42-45 Engine Distillate 445-480 e.p.....	7.50 – 8.75	8.00 – 9.00	8.50 – 9.75

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	3.75	4.00 – 4.25	4.375– 4.50
Grade A, 72-79.9, 90% Recovery.....	4.125	4.25 – 4.50	4.625– 4.75
Grade BB, 84-92, 85% Recovery.....	3.625– 3.75	3.75 – 4.00	4.00
Grade B, 76-83.9, 85% Recovery.....	3.625– 3.75	4.00 – 4.125	4.25
Grade C, 80-92, 78% Recovery.....	3.625– 3.75	3.75 – 4.00	4.00

NORTH TEXAS (F. o. b. Breckenridge)

Grade AA, 80-87.9, 90% Recovery.....	3.75	4.00 – 4.25	4.375– 4.50
Grade A, 72-79.9, 90% Recovery.....	4.125	4.25 – 4.50	4.625– 4.75
Grade BB, 84-92, 85% Recovery.....	3.625– 3.75	3.75 – 4.00	4.00
Grade B, 76-83.9, 85% Recovery.....	3.625– 3.75	4.00 – 4.125	4.25
Grade C, 80-92, 78% Recovery.....	3.625– 3.75	3.75 – 4.00	4.00

NORTH LOUISIANA (F. o. b. Monroe District)

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
Grade AA.....	†4.00	†4.25	†4.50
Grade BB.....	†3.75– 4.00	†4.00	†4.25
Grade C.....	†3.75– 4.00	†4.00	†4.25

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	6.00 – 7.00	6.00 – 7.00	6.50 – 7.25

BURNING OILS

PENNSYLVANIA (F o. b Western Pennsylvania refineries)

45 w. w. kerosine.....	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
46 w.w. kerosine.....	5.125– 5.50	5.00 – 5.50	5.00 – 5.50
47 w. w. kerosine.....	5.375– 5.75	5.25 – 5.75	5.25 – 5.75
300 mineral seal.....	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w. w. kerosine.....	3.00 – 3.25	3.125– 3.25	3.125– 3.375
42-44 w. w. kerosine.....	3.25 – 3.50	3.25 – 3.50	3.50 – 4.00

KANSAS (F. o. b. refinery Kansas destination)

41-43 w. w. kerosine.....	3.50 – 4.00	3.50 – 4.00	3.50 – 4.00
42-44 w. w. kerosine.....	4.25 – 4.50	4.25 – 4.50	4.25 – 4.50

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w. w. kerosine.....	3.00	3.00	3.00
41-43 w. w. kerosine.....	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00
42-44 w. w. kerosine.....	4.25	4.25	4.25

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w. w. kerosine.....	4.00	4.00	4.00

CALIFORNIA (F. o. b. California refineries)

38-40 w. w. kerosine.....	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.		(Viscosity at 70° F.)	
200 No. 3 Assoc. Filt.....	17.00	16.75 –18.00	16.75 –18.00
180 No. 3 Assoc. Filt.....	14.00 –15.00	14.00 –15.00	14.00 –15.00
150 No. 3 Assoc. Filt.....	11.00	10.50 –12.00	10.75 –12.00

Note: Low cold test neutral oils are quoted approximately 6c per gal. higher than prices shown above, beginning Dec. 8.

		(Non Viscous)	
34 Grav. 330-340 Flash...	5.50 – 6.50	5.50 – 6.50	5.50 – 6.50

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color		(Viscosity at 100° F.)	
100—No. 2.....	5.50	5.50	5.50
150—No. 3.....	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
150—No. 4.....	6.50	6.50	6.50
180—No. 3.....	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 4.....	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
180—No. 5.....	7.50	7.50	7.50
200—No. 3.....	9.75 –10.00	9.75 –10.00	9.75 –10.00
200—No. 4.....	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
200—No. 5.....	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
220—No. 3.....	11.50	11.50	11.50
220—No. 4.....	11.00	11.00	11.00
220—No. 5.....	10.00	10.00	10.00
240—No. 3.....	13.50	13.50	13.50
240—No. 4.....	12.50	12.50	12.50
240—No. 5.....	11.50	11.50	11.50
280—No. 3.....	15.50	15.50	15.50
280—No. 4.....	14.50	14.50	14.50
80—No. 5.....	13.50	13.50	13.50

†Prices nominal ††Only one refiner quoting *Quotations only

****Represents Both Sales and Quotations.**

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
	(Viscosity at 100° F., pour test 0)		
100—No. 2 Pale	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
200—No. 3 Pale	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
300—No. 3 Pale	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
500—No. 3½ Pale	10.50 –11.00	10.50 –11.00	10.50 –11.00
750—No. 4 Pale	12.00 –12.50	12.00 –12.50	12.00 –12.50
1200—No. 4 Pale	14.50 –15.00	14.50 –15.00	14.50 –15.00
2000—No. 4 5 Pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200—No. 5½ Red Oil	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75
300—No. 5½ Red Oil	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
500—No. 6 Red Oil	9.75 –10.25	9.75 –10.25	9.75 –10.25
750—No. 6 Red Oil	11.25 –11.75	11.25 –11.75	11.25 –11.75
1200—No. 5-6 Red Oil	13.50 –14.00	13.50 –14.00	13.50 –14.00
2000—No. 6 Plus Red Oil	15.50 –16.00	15.50 –16.00	15.50 –16.00

‡CALIFORNIA (F. o. b. California refineries)

Vis. Color			
	(Viscosity at 100° F.)		
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50	11.50	11.50
300—No. 3	13.00	13.00	13.00
450—No. 3	15.50	15.50	15.50
550—No. 3	16.50	16.50	16.50
600—No. 3	17.00	17.00	17.00
200—No. 5	11.00	11.00	11.00
300—No. 5	12.00	12.00	12.00
400—No. 5	14.00	14.00	14.00
500—No. 5	15.00	15.00	15.00
600—No. 5	16.00	16.00	16.00
700—No. 7	18.00	18.00	18.00

‡Neutral oils not manufactured commercially in California.

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Bright stock prices represent quotations to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	25.00	25.00	25.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	20.00 –21.00	20.00 –21.00	20.00 –21.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	19.00 –20.00	19.00 –20.00	19.00 –20.00
150-160 Vis. D Brt. Stock, 25-40 cold test	17.00 –19.00	17.00 –19.00	17.00 –19.00
150-160 Vis. E 210° Brt. St.	16.00 –17.00	16.00 –17.00	16.00 –17.00
600 St. Ref. Olive Green	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
600 St. Ref. Dark Green	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	8.75 – 9.00	8.75 – 9.25	9.00 – 9.50
650 Steam Refined	13.50 –15.00	13.75 –15.00	14.00 –16.00
600 Flash	15.50 –16.00	16.00 –16.50	16.00 –18.00
630 Flash	23.00 –25.00	24.00 –25.00	24.00 –25.00
600 Warren E	15.00 –15.50	15.00 –16.00	†15.00 –17.00
600 Oil City E	14.00 –14.50	14.50 –15.00	†15.00 –15.50
600 D Filtered	†17.00 –18.00	18.00 –19.00	18.00 –19.00
Cold Test Stock, 140-150 vis. at 210°, 540-550 flash.			
No. 8 color, below ‡25 pour test	20.00 –23.00	20.00 –23.50	20.00 –23.50
No. 8 color, 25-35 pour test	18.00 –19.50	.....	.....
No. 8 color, above 35 pour test	17.50 –18.00	18.00 –20.00	18.00 –20.00
No. 6-6½ color diluted, 40-50 pour test	†17.00 –20.00	†17.00 –20.00	†17.00 –21.00

‡Changed to below 25 p.t. Dec. 8. Formerly below 35 p.t.

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	2.375	2.25 – 2.375	2.15 – 2.25
124-126 white crude scale, a.m.p.	2.375– 2.50	2.25 – 2.375	2.18 – 2.25

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	2.00	2.00	2.00

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	3.375– 3.50	3.375– 3.75	3.375– 3.75
30-34 fuel oil	3.375– 3.50	3.375– 3.625	3.50 – 3.75
28-32 fuel oil	3.375– 3.50	3.375– 3.625	3.50 – 3.75

Note: Zero cold test fuel oils are quoted 0.25c to 0.50c higher than prices shown above, beginning Dec. 8.

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
38-40 straw distillate	2.875– 3.125	3.00 – 3.125	3.00 – 3.125
36-38 straw distillate	2.75 – 2.875	2.875– 3.00	2.875– 3.00
32-36 straw gas oil	2.50 – 2.625	2.50 – 2.625	2.50 – 2.625
32-36 straw gas oil zero	2.625– 2.875	2.75 – 2.875	2.75 – 2.875
32-36 dark gas oil	2.125– 2.25	2.125– 2.375	2.125– 2.375
32-36 dark gas oil zero	2.625– 2.75	2.625– 2.875	2.625– 2.875
28-30 zero fuel oil(per bbl.)	$0.85 – 0.95	$0.85 – 0.95	$0.85 – 0.95
28-30 fuel oil (per bbl.)	$0.80 – 0.825	$0.80 – 0.825	$0.80 – 0.825
26-28 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
24-26 fuel oil (per bbl.)	$0.60 – 0.70	$0.65 – 0.70	$0.65 – 0.70
22-26 fuel oil (per bbl.)	$0.525– 0.575	$0.55 – 0.60	$0.55 – 0.60
18-22 fuel oil (per bbl.)	$0.45 – 0.50	$0.475– 0.525	$0.475– 0.525
16-20 fuel oil (per bbl.)	$0.425– 0.45	$0.425– 0.475	$0.425– 0.475
14-16 fuel oil (per bbl.)	$0.40 – 0.425	$0.40 – 0.45	$0.40 – 0.45

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	3.00 – 3.50	3.25 – 3.50	3.25 – 3.50
36-38 straw distillate	3.00	3.00	3.00
32-36 straw gas oil	3.00	3.00	3.00
18-22 fuel oil (per bbl.)	$0.70 – 0.75	$0.70 – 0.75	$0.70 – 0.75
10-14 fuel oil (per bbl.)	$0.55 – 0.65	$0.55 – 0.65	$0.55 – 0.65

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	2.75 – 3.00	2.875– 3.00	2.875– 3.00
38-40 p.w.treated distillate	3.125– 3.25	3.125– 3.25	3.125– 3.25
32-36 gas oil, cracked	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
32-36 St. reduced gas oil	2.125– 2.375	2.125– 2.375	2.125– 2.375
24-26 fuel oil (per bbl.)	$0.50	$0.50	$0.50 –$0.55
20-24 fuel oil (per bbl.)	$0.45	$0.45	$0.45 –$0.50
18-22 fuel oil (per bbl.)	$0.40	$0.40	$0.40 –$0.45

****WEST TEXAS** (F. o. b. West Texas refinery, or unrestricted shipment)

34-38 gas oil	2.125– 2.375	2.125– 2.375	2.25 – 2.50
30-32 gas oil	1.875– 2.125	1.875– 2.125	1.875– 2.125
28-30 zero gas oil	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
18-22 fuel oil (per bbl.)	$0.40 –$0.50	$0.50 –$0.60	$0.50 –$0.60

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	*3.25	*3.25	*3.25
32-36 gas oil, straw	*3.25	*3.25	*3.25
14-16 fuel oil (per bbl.)	$0.75 –$0.85	$0.75 –$0.85	$0.75 –$0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.25	3.25	3.25
32-36 dark gas oil	3.25	3.25	3.25
28-30 gas oil	3.00	3.00	3.00
20-24 fuel oil (per bbl.)	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
9-12 fuel oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
Black oil	3.25	3.25	3.25

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.35 –$0.60	$0.35 –$0.60	$0.35 –$0.60
14-18 Bunker oil (per bbl.)	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.85
30-34 gas oil (per bbl.)	$0.80 –$1.05	$0.85 –$1.05	$0.85 –$1.05
27 Plus Diesel oil (per bbl.)	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. refinery. In tank cars ⅝c to ¾c per pound less.) Two refiners quoting.

Snow White	8.50	8.50	8.50
Lily White	7.50	7.50	7.50
Cream White	6.50	6.50	6.50
Light Amber	3.375– 3.625	3.375– 3.625	3.375– 3.625
Amber	3.125– 3.375	3.125– 3.375	3.125– 3.375
Red	2.875– 3.00	2.875– 3.00	2.875– 3.00

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

(Per ton in car lots)

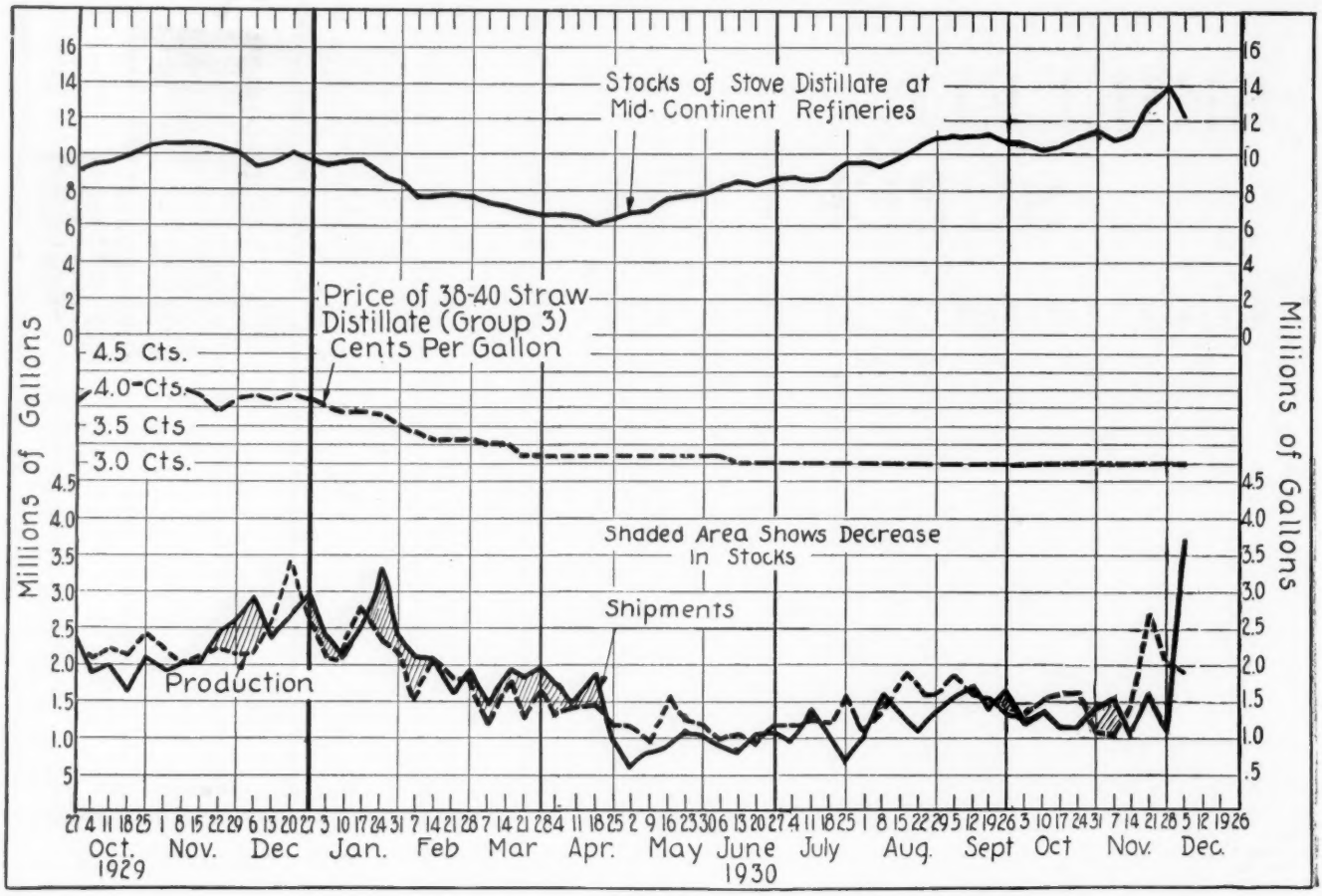
Lump	$4.50 –$5.00	$4.50 –$5.00	$4.50 –$5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

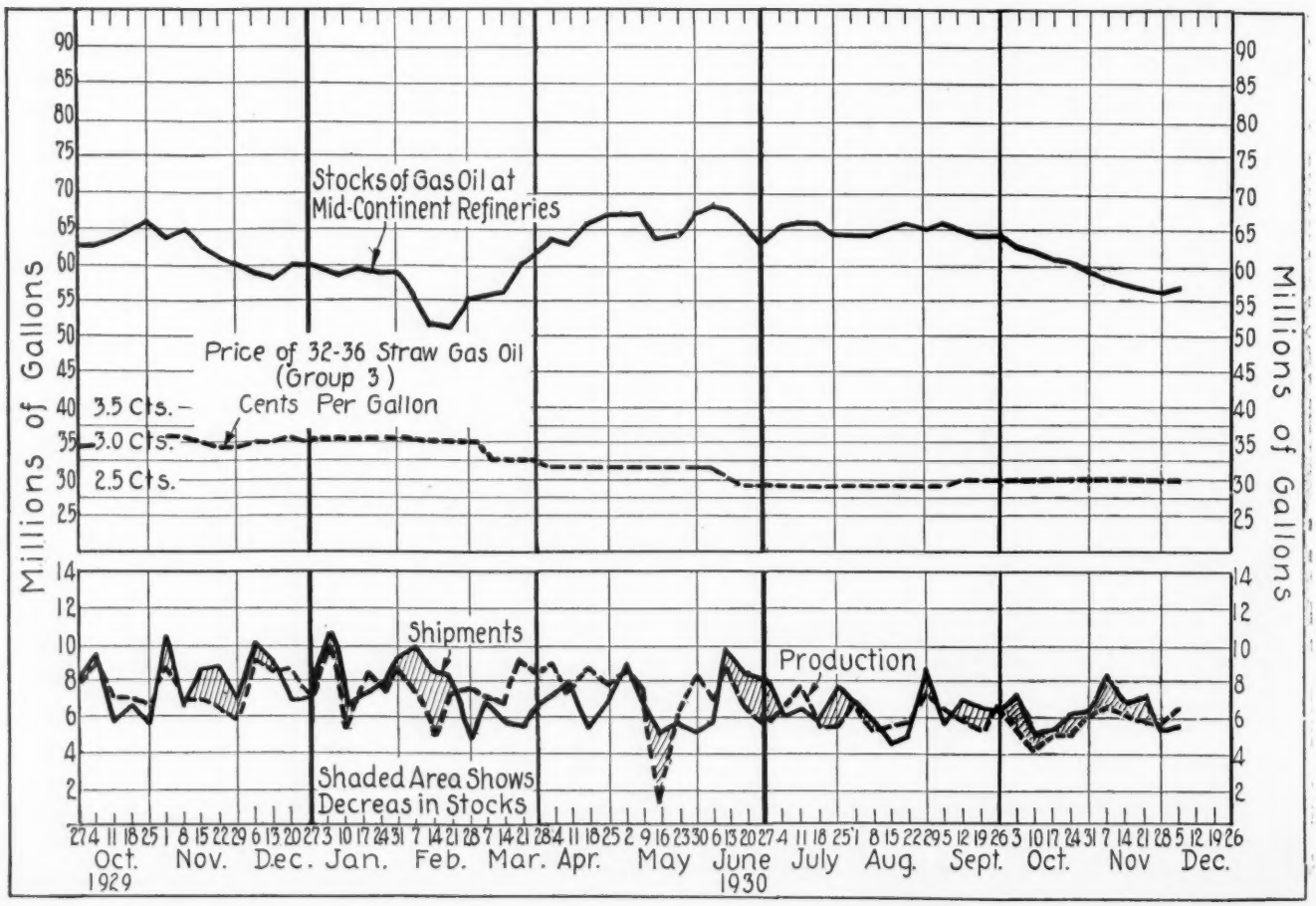
†Prices nominal ††Only one refiner quoting *Quotations only

****Represents Both Sales and Quotations.**

Barometer of Mid-Continent Refinery Market—Week Ending December 5

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallon
4.5 Cts.
4.0 Cts.
3.5 Cts
3.0 Cts.
Shaded Area Shows Decrease In Stocks
Shipments
Production
Millions of Gallons
Oct. 1929 Nov. Dec Jan. Feb Mar Apr. May June 1930 July Aug. Sept Oct Nov. Dec.


Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Straw Gas Oil (Group 3) Cents Per Gallon
3.5 Cts.
3.0 Cts.
2.5 Cts.
Shipments
Production
Shaded Area Shows Decreas in Stocks
Millions of Gallons
Oct. 1929 Nov. Dec. Jan. Feb. Mar. Apr. May June 1930 July Aug. Sept. Oct. Nov Dec.

SKILLED SUPERVISION

Guarantees the Quality of Gulf Products

COASTAL AND PARAFFINE CRUDES
GASOLINE—LUBRICATING OILS
NAPHTHA—GAS—OILS
WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

Light Weight Folio

No. 369—A compact outfit. Folio made from heavy 5-oz. smooth black cowhide, with 5½-inch over-all expansion and three inner pockets. Inner case contains six 4-oz. bottles, displayed on a background of red velvet. Each bottle is partitioned separately. Case also contains five grease jars.

Less 10% for Cash

Other styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware, KANSAS CITY, MO.

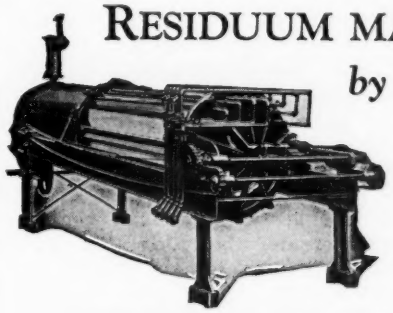
HEARTIEST SEASON'S GREETINGS!

Our hand is extended for a warm and friendly clasp to those in the industry whose acquaintance we have not yet been privileged to make, as well as to the friends we now count ourselves indeed fortunate in having. Our sincerest wish is that 1931 and the coming years bring you continued happiness and prosperity.

CHAMPION
Pneumatic Machinery Co.

8168 South Chicago Avenue
Chicago, Illinois

RESIDUUM MADE PROFITABLE
by KELLY *Pressure Filters*



It is now entirely practical and economical to clean up pressure still residuum.

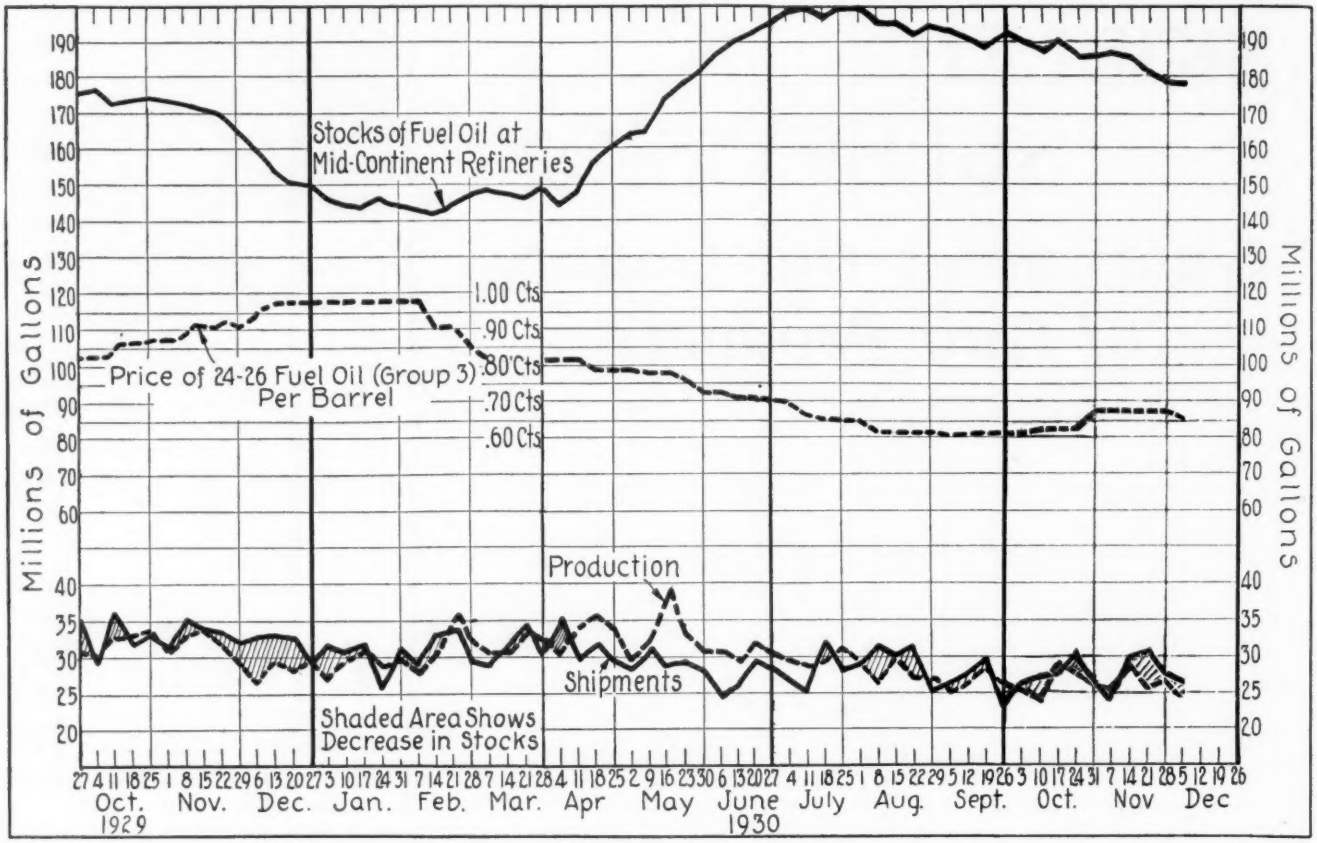
The Kelly Filter is the unit to use. It has fully proved its suitability. It is doing excellent work in a number of refineries. Send for further data.

OLIVER UNITED FILTERS INC.

SAN FRANCISCO, Fed. Reserve Bank Bldg. NEW YORK, 33 West 42nd St.
CHICAGO, 565 Washington Blvd. LONDON, W. C. 1, 150 Southampton Row
PARIS, T. L.Genter, Concessionaire, 63 Ave. des Champs Elysees

Barometer of Mid-Continent Refinery Market—Week Ending December 5

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News



California Refinery Market

Inquiry More Active for Bulk Shipments

LOS ANGELES, Dec. 6

INCREASED inquiries from Atlantic domestic and foreign buyers featured the west coast market the past week. Local tank car markets were relatively quiet. Prices, generally speaking, showed little change from those quoted a week ago.

No cargo sales were reported during the week, but the increased inquiries were considered as encouraging by the export trade. One inquiry called for approximately 75,000 barrels of U. S. Motor gasoline for delivery north of Cape Hatteras but not east of New York. It was received by the trade late in the week and called for delivery on or about Jan. 10.

Quotations for U. S. Motor in cargo lots were largely nominal. It has been quite some time since there was any strictly open market business placed. One refiner was reported definitely offering gasoline at 6.50 cents and it was believed that a cargo or two could be bought at 6.25 cents or possibly 6 cents on firm offer.

Other inquiries reported by the export trade were for a cargo of gas oil, presumably for shipment to the east coast, and for bunker fuel oils, from steamship companies seeking to place their 1931 requirements.

Bids opened on the United States naval fuel oil requirements in the Canal Zone covering approximately 200,000 barrels of bunker C indicated the Arrow Oil Co. was low with a figure of $0.86 per barrel, delivered. Last year this business went at $0.89 per barrel, f.o.b. Balboa.

Business was noticeably quiet in the local gasoline markets as the trade continued buying on a hand-to-mouth basis. What little tank car movement there was went at 8 to 10.50 cents. One dealer said he would sell several cars at 7.75 cents. These prices were exclusive of the state tax.

For shipment into competitive points outside the state quotations were reported as 7.25 to 8.50 cents. Out-of-state business was slack and few spot sales were made.

Demand for gas oil and Diesel oil was good with quotations ranging from $0.80 to $1.05 per barrel on the former and a low of $0.85 per barrel on the latter. Heavy dark color gas oil suitable for smudging purposes brought about $0.80 per barrel.

The Brown Instrument Co., Philadelphia, has published a catalog of 104 pages presenting a comprehensive resume of the theory and practice of applied pyrometry, together with descriptions and illustrations of all its indicating, recording and controlling instruments, thermocouples, protecting tubes and other refinery equipment.

The bulletin tells how these instruments obtain accurate cuts in oil refining and insure minimum re-running; and explain their uses and advantages in many other industries.

Pennsylvania Markets

Trade Reports More Optimistic

CLEVELAND, Dec. 8.—Reports on general market conditions were more optimistic in Pennsylvania last week. Prices for most oils were largely unchanged, but increased demand for several commodities, particularly wax, neutral oils and kerosine, gave rise to some enthusiasm on the part of the trade generally.

Demand for the zero cold test neutrals was better than for the ordinary cold test grades but even the latter were getting better play than for several weeks, according to reports. Prices for the 200 No. 3 color and 150 No. 3 color grades advanced 0.5 cent a gallon. One or two refiners reported sales of minimum 410 flash material at prices representing an advance of 0.75 cent.

The inquiry from New York dealers for wax continued active and prices advanced an additional 0.125 cent per pound. Offerings were rather scarce, several refiners reporting they were sold up for six to eight weeks. The 122-124 A.m.p. white crude scale was quoted mostly at 2.375 cents a pound. One or two sellers offered 124-126 A.m.p. at the same price while others quoted 2.50 cents a pound. A broker with an order for two cars of 124-126 said he had to shop around quite a bit to obtain a price of 2.375 cents.

Gasoline demand was reported by most sellers as being fair to good. Some shading of 6.50 cents was reported for U. S. Motor but the bulk of business was done at this price and slightly higher.

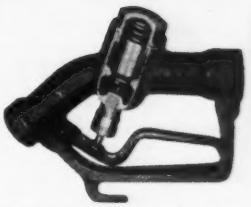
Inquiries for cylinder stocks showed some improvement. Prices for these oils were lower, however. Low pour test bright stocks were offered nearer the levels of the high pour test stocks.

Neptune Meter Co., New York, has developed a positive displacement, disc-type grease meter to meet the specifications for grease dispensing equipment adopted by the National Conference of Weights and Measures last June, which will go into effect in many states Jan. 1.

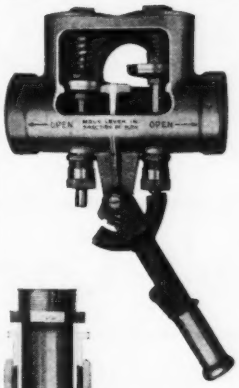
This new grease meter measures any kind of grease in all weather conditions. It is readily attached through its standard fittings to any type of grease dispensing equipment. It records deliveries in pints and fractions of pints, has a vertical dial which reads up to eight pints, and a counter indicating total deliveries up to 10,000 pints and then repeats. Bulletin on request to company.

OPW

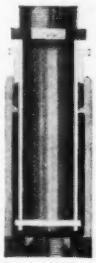
New designs that mean *greater* efficiency at *lower* cost...



Bronze Nozzle Valve for Meter Pumps. Catalog No. 20



Three-Way Loading Valve. Catalog No. 68



Flush Box Expansion Sleeve. Catalog No. 84

These three units should interest every man connected with a gasoline service station or a bulk storage plant.

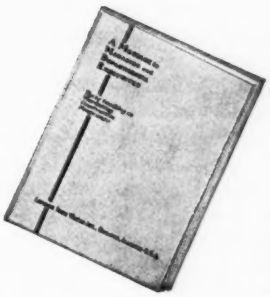
O.P.W. Bronze Nozzle Valve accurately governs the measuring of gasoline. Baffle prevents undue pressure on the poppet. Uniform lever control.

O.P.W. Three-Way Loading Valve is a compact labor-saving device used in loading and unloading at bulk storage plants. Flow control in either direction.

O.P.W. Expansion Sleeve avoids breaking of connections due to settling of tank or raising of concrete.

These three are typical of O.P.W. equipment. Let us tell you about the complete line.

The Ohio Pattern Works & Foundry Co.
2730 Spring Grove Ave. Cincinnati, Ohio



LEADER, a few months ago, published a book "A Message to Managing and Departmental Executives" setting forth a lot of facts touching on Marketing Construction Programs.

LEADER has a few copies left which will be sent to interested executives upon request. Reference to this book will aid you materially in shaping your 1931 plans.

Address:

LEADER IRON WORKS, INC.

2112 NO. JASPER ST. DECATUR, ILLINOIS

Eastern Domestic Markets

Gasoline Prices Recede 0.25 to 0.5 Cent

Staff Special
NEW YORK, Dec. 6

GASOLINE prices continued to drift toward lower levels in the majority of eastern districts the first week of December. Demand from the jobbing trade generally was reported as holding up extremely well but keen competition for business caused reductions of 0.25 to 0.5 cent in prices along the northern half of the seaboard.

Late in the week Standard Oil Co. of New Jersey reduced its posted tank car price for U. S. Motor gasoline to 6.50 cents, f.o.b. Bayonne. Sizable sales of this gasoline were reported by other sellers at New York harbor at 6.25 cents and occasional offerings were reported at 6 cents. The volume of gasoline moving at the latter figure was relatively small, however, and it was generally believed that this price was not representative of the general market.

Prices in the Baltimore and Philadelphia districts were lower in line with New York harbor although in these districts very little U. S. Motor was moving at less than 6.50 cents.

New England markets also reflected the decline at New York harbor. Large offerings of regular U. S. Motor were reported by sellers at 7.50 cents, delivered, in metropolitan Boston.

Prices for California gasoline showed little change in any of the three districts where this material is offered. The demand for tank car shipments at New York harbor was reported negligible. Baltimore and Philadelphia sellers said they were enjoying a fair volume of tank car business. Gasolines represented as being "as good as" or "better than" California gasoline, offered at 6.50 to 6.75 cents, caused quite a bit of confusion among the trade.

Kerosine was in brisk demand according to reports from the majority of sellers. This was particularly true in the New England area. There was no change in the price for water white at New York harbor despite the proximity of gasoline prices to the level of kerosine prices.

Burning oils also were in good demand with prices generally unchanged. The low prices for gasoline, however, have discouraged the cracking of gas oil with the result that offerings of the latter commodity have increased substantially.

Posted prices for grade C bunker oil were unchanged at $1.05 per barrel at New York and Boston. In the Philadelphia district, a price of $0.79 per barrel has been reported for ships bunkers.

McKee To Build Pumping Stations

CLEVELAND—Seven pumping stations and boiler houses will be built by Arthur G. McKee & Co., engineers and contractors here, for the Great Lakes Pipe Line Co., Ponca City, Okla. which is building a gasoline line from Ponca City to Des Moines, Ia. The line will branch from there to Minneapolis, St. Paul and to Chicago. The stations with their equipment will cost about $650,000. Building will start shortly.

Wisconsin Men To Frolic Again

WEST ALLIS, Wis.—The annual winter frolic and equipment show of the Wisconsin Petroleum Association will be held at the Pfister Hotel, Milwaukee, Jan. 21 and 22, according to H. A. Rohde, Rohde-Deuster-Hinkley Oil Co., West Allis, president of the association.

Gulf Coast Markets

Foreign Demand Fairly Active

Staff Special
NEW YORK, Dec. 6

FURTHER downward revisions in cargo prices for gasoline and kerosine were noted at the Gulf the past week. Foreign demand was fairly active, considering the season. One mixed cargo transaction was reported closed with a French account and a second French buyer entered the market toward the end of the week.

Actual selling prices governing the transaction closed could not be obtained from the seller. The majority of Gulf suppliers, however, gave 5.25 cents and 6.25 cents as their ideas of prices for U. S. Motor and 64-66, 375 end point gasoline, respectively, and it was generally believed that the French buyer had obtained these prices. They represent a decline of 0.25 cent from prices quoted a week ago.

Kerosine also was quoted 0.25 cent lower with water white at 5.25 cents and prime white, 4.25 cents.

The new inquiry from a French buyer reported toward the end of the week called for approximately 5500 tons of 64-66, 375 end point gasoline and 2000 tons of water white kerosine for early January lifting. Most suppliers reported they would quote the aforementioned prices for this business.

Prices for cased gasoline and kerosine were unchanged. One supplier indicated a disposition to shade the $1.40 price for water white kerosine, however, when an inquiry for 20,000 cases of this material appeared.

Prices for Grade C bunker oil remained unchanged at $0.60 to $0.65 a barrel in a quiet market. Other heavy oils also were in light demand with 26-30 gas oil still quoted at 3.125 cents and 30 plus at 3.375 cents.

Venezuela Crude

The market for Venezuela crude continued quiet and suppliers reported there was little prospect for business before the first of the year.

Nominal prices quoted for Venezuela crude ranged from $0.75 to $0.80 per barrel, f.o.b. deepwater in the Lake Maracaibo region.

Panuco Crude

Mexican heavy oils were generally unchanged. There was a fair demand for Panuco crude, according to reports, at $0.56 per barrel.

Wax Markets

Prices Continue to Advance

NEW YORK, Dec. 6.—Prices for several grades of wax were slightly higher the past week. A reported scarcity of white crude scale and 125-127 fully refined wax was responsible for quotations for these grades being advanced 0.125 cent in both the New York and New Orleans markets.

The closing date on the inquiry from the Spanish Monopoly for approximately 3000 tons of fully refined wax has been extended to Dec. 15, according to reports from sellers conversant with this business.

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Marshalltown, Ia. — Phillips Petroleum Co., Phillips Bldg., Bartlesville.
Deep River, Ia.—Robert Johnson.
Mankato, Minn.—Miller Motor Co.
Swea City, Ia.—Cities Service Oil Co., Commercial Bldg., Tulsa.
Antigo, Minn.—White Eagle Oil & Refining Co., Federal Reserve Bank Bldg., Kansas City.
Morton, Minn.—A. H. White.
Aitkin, Minn.—Cuyuna Oil Co., Crosby.
Wilmington, Del. — Auburn Sales, Inc.
Richmond, Va.—Continental Oil Co., Ponca City, Okla.
Wheeling, W. Va.—Scharf Bros.
Toledo, O.—White Star Refining Co., 903 Grand Blvd., Detroit.
Findlay, O.—Standard Oil Co. of Ohio, Midland Bank Bldg., Cleveland.
Racine, Wis.—Ellis A. Klinger, 3205 Kinzie Av.
Payson, Ill.—Paul Reinebach.
Somerset, O.—Shell Petroleum Corp., Shell Bldg., St. Louis.
Marshalltown, Ia.—Continental Oil Co., Ponca City, Okla.
Manistique, Mich.—Cloverland Oil Co.
Minneapolis, Minn.—Robert Johnson.
Philadelphia, Pa.—Charles Kahn.
Topeka, Kan.—Central States Oil Co., Council Bluffs, Ia.
Howard Lake, Minn.—Wm. Hempel.
Howard Lake, Minn.—James A. Romotka, Foley.
Deckerville, Mich.—Deckerville Oil & Gas Co.
Princeville, Ill.—Gus Streitmatter.
Monticello, Ill.—Phillips Petroleum Co., Phillips Bldg., Bartlesville.
Ashland, Ky.—Standard Oil Co. of Kentucky, Louisville.
Luck, Wis.—A. V. Johnson.
Corydon, Ia.—Cities Service Oil Co., Commercial Bldg., Tulsa.
Pittsfield, Ill.—Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa.
North Vernon, Ind.—B. & B. Oil Co.
Atlantic, Ia.—Skelly Oil Co., Skelly Bldg., Tulsa.
Willmar, Minn.—Kandiyohi County Farmers Union.
Thief River Falls, Minn.—The Texas Co., Chrysler Bldg., New York City.
Charleston, Ill.—Mid-Continent Petroleum Corp., Cosden Bldg., Tulsa.
Athens, Tex.—Humble Oil & Refining Co., Main & Polk, Houston.
Jefferson City, Mo.—The Texas Co., Chrysler Bldg., New York City.
Nebraska City, Neb. — MonaMotor Oil Co., Council Bluffs.
Clay Center, Kan.—Whiteline Oil Co.
Omaha, Neb.—Deep Rock Oil Co., 424 S. Cheyenne, Tulsa.
Moline, Ill.—Arron Petroleum Corp., 19th & 5th Aves.
Sioux City, Minn.—Cities Service Oil Co., Commercial Bldg., Tulsa.
Hastings, Neb.—R. G. Foote, 1214 W. 6th St.

An Oil Jobber *Should Jump At This!*

FREEDOM offers you a 100% Pennsylvania motor oil that can be supplied to your trade with your own brand name.

More than 700 jobbers throughout the country are receiving regular shipments under this plan. And it pays them handsomely too. It enables them to market a high-quality product at a wider margin of profit.

If you have your own specifications we'll make up (Sharples Process) a motor oil that exactly meets them. Or we'll be glad to recommend one of our own tested specifications.

Shipments are made whenever you want them in tank cars, compartment tank cars or drums. Full information is yours for the asking.

THE FREEDOM OIL WORKS CO.
Refineries at FREEDOM and CORAOPOLIS, PA.

Also available for immediate shipment

85/90 Viscosity Bright Stock
100% Pennsylvania Neutrals
600 Steam Refined
650 Steam Refined
600 Flash Steam Refined
Freedom Filtered Kerosene Oil

FREEDOM
100% PENNSYLVANIA OILS

FO-502

Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in some states.)

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
U. S. MOTOR GASOLINE			
New York harbor	6.25 – 6.50	6.25 – 6.75	6.50 – 7.00
Portland district	**8.25	**8.25	**8.25
Boston district	**7.25	**7.75	**7.75
Providence district	*7.50 – 7.75	*7.875– 8.25	*7.875– 8.25
Philadelphia district	6.50 – 6.75	6.75 – 7.00	6.75 – 7.00
Baltimore district	6.50 – 6.75	6.75 – 7.00	6.75 – 7.00
Norfolk district	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
Charleston district	7.00	7.00	7.00
Savannah district	7.00	7.00	7.00
Jacksonville district	7.00	7.00	7.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	7.00 – 7.50	7.00 – 7.50	†7.50
Philadelphia district	7.25	7.25 – 7.50	7.50
Baltimore district	7.00 – 7.25	7.00 – 7.25	7.50
‡DOMESTIC AVIATION GASOLINE			
New York harbor	9.50 –13.00	10.00 –13.00	10.00 –12.00
Philadelphia	9.50 –12.00	10.00 –12.00	10.00 –12.00
Baltimore	11.00 –13.00	11.00 –13.00	11.00 –13.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Philadelphia district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
Baltimore district	6.50	6.50	6.50
GAS OIL: 28-34 Gravity			
New York harbor	4.50	4.50 – 4.75	4.50 – 4.75
Boston district	4.50	4.50 – 4.75	4.50 – 4.75
FURNACE OIL: 36-40 Gravity			
New York harbor	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
Boston district	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.00	$2.00	$2.00

†Nominal. *Delivered prices. **Minimum delivered price.

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Dec. 8	Dec. 1	Nov. 24
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	27.50 –29.75	27.50 –29.50	27.50 –29.50
Bright stock, No. 6½ color diluted	26.00 –28.00	26.00 –28.00	26.00 –28.00
600 D filtered	24.00 –27.00	24.00 –28.00	24.00 –28.00
600 Warren E. filtered	21.50 –24.00	22.00 –25.00	22.00 –25.00
600 stm. refd. unfiltered	16.50 –17.50	16.50 –17.50	17.00 –18.00
650 stm. refd. unfiltered	19.50 –20.50	20.00 –22.00	20.00 –22.00
600 flash, steam refined	22.00 –24.00	22.00 –24.00	23.00 –25.00
630 flash, steam refined	31.00 –33.00	31.00 –33.00	31.00 –33.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –20.00	17.00 –19.00	17.00 –19.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	14.75 –17.00	16.25 –17.00	16.25 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¾ color	21.50	21.50	21.50
180 vis. No. 3¼ color	17.00 –18.00	17.00 –18.00	17.00 –18.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	27.50 –30.00	27.50 –30.00	27.50 –30.00
400 vis. No. 7¼ color	26.00 –29.00	26.00 –29.00	26.00 –29.00
300 vis. No. 6 color	22.00 –26.00	22.00 –26.00	22.00 –26.00
200 vis. No. 6 color	21.00 –23.50	21.00 –23.50	21.00 –23.50

Wax Market

(Prices in cents per pound, A.S.T.M. tests except melting point test for which only the American method is used. F.a.s. carload lots)

	Dec. 8	Dec. 1	Nov. 24
NEW YORK			
124-126 Yellow crude scale	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
122-124 White crude scale	2.30 – 2.50	2.30 – 2.40	2.25 – 2.375
124-126 White crude scale	2.30 – 2.50	2.30 – 2.40	2.25 – 2.375
123-125 Fully refined	3.25	3.25	3.125– 3.25
125-127 Fully refined	3.375– 3.50	3.375	3.25 – 3.375
128-130 Fully refined	3.625	3.625	3.50 – 3.625
130-132 Fully refined	3.875	3.875	3.625– 3.875
133-135 Fully refined	4.375	4.375	4.25 – 4.375
135-137 Fully refined	4.625– 4.75	4.625	4.50 – 4.625
NEW ORLEANS			
124-126 Yellow crude scale	2.30 – 2.50	2.25 – 2.375	2.25
122-124 White crude scale	2.375– 2.50	2.375	2.25 – 2.375
124-126 White crude scale	2.375– 2.50	2.375	2.25 – 2.375
123-125 Fully refined	3.25	3.25	3.125– 3.25
125-127 Fully refined	3.375– 3.50	3.25	3.125– 3.25
128-130 Fully refined	3.50 – 3.625	3.375– 3.50	3.25 – 3.375
130-132 Fully refined	3.75	3.75	3.625– 3.75
133-135 Fully refined	4.375	4.375	4.25 – 4.375

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

	Prices Dec. 8	Prices Dec. 1	Prices Nov. 24
GASOLINE			
U. S. Motor	5.25 – 5.50	5.50 – 5.75	5.75 – 6.00
60-62, 400 e.p.	5.75	6.00	6.25
61-63, 390 e.p.	6.00	6.25	6.50
64-66, 375 e.p.	6.25 – 6.50	6.50 – 6.75	6.625– 6.875
U. S. Motor, cases (cargoes)	$1.60	$1.60	$1.60
64-66, cases (cargoes)	$1.70 –$1.72	$1.70 –$1.72	$1.70 –$1.72
KEROSINE			
44 water white	5.25 – 5.50	5.25 –5.50	5.50
41-43 prime white	4.25 – 4.50	4.50	4.50
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	3.125– 3.25	3.125– 3.25	3.125– 3.25
*30 plus translucent gas oil	3.375– 3.50	3.375– 3.50	3.375– 3.50
Grade C bunker oil, for ships' bunkers, per bbl.	$0.90	$0.90	$0.90
Grade C bunker oil, per bbl. in cargoes	$0.60 –$0.65	$0.60 –$0.65	$0.65 –$0.75

*Less than ½ of 1% sulphur.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid, per bbl.	$0.56	$0.56	$0.55 –$0.60
Grade C bunker oil for bunkering, taxes paid, per bbl.	$1.00	$1.00	$1.00
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	4.75 – 5.75	5.50 – 5.75	5.50 – 5.75
200 vis. No. 3 unfiltered pale	7.375– 8.25	7.625– 8.25	7.625– 8.25
300 vis. No. 3 unfiltered pale	8.25 – 9.50	8.75 – 9.50	8.75 – 9.50
500 vis. No. 3½ unfiltered pale	9.00 –10.50	9.50 –10.50	9.50 –10.50
750 vis. No. 4 unfiltered pale	11.50 –12.75	12.00 –12.75	12.00 –12.75
1200 vis. No. 4 unfiltered pale	14.00 –16.00	14.00 –16.00	14.00 –16.00
200 vis. No. 5-6 red oil	6.75 – 7.00	6.75 – 7.50	6.75 – 7.50
300 vis. No. 5-6 red oil	7.75 – 8.375	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	8.25 – 9.00	9.00 – 9.375	9.00 – 9.375
750 vis. No. 5-6 red oil	10.50 –11.50	10.50 –11.50	10.50 –11.50
1200 vis. No. 5-6 red oil	13.50 –15.00	13.50 –15.00	13.50 –15.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Dec. 8	Dec. 1	Nov. 24
Gasoline, U. S. Motor, 53-55 Gravity	6.25 – 7.50	6.50 – 7.50	6.50 – 7.50
Gasoline, U. S. Motor-blends and special cuts	7.00 – 8.25	7.00 – 8.25	7.00 – 8.25
Gasoline, 400 e.p. blend.	8.25 – 9.25	8.25 – 9.25	8.25 – 9.25
Gas Oil, 30-34 per bbl.	$0.87 –$1.05	$0.87 –$1.05	$0.87 –$1.05
Diesel Oil, 27 plus, per bbl.	$0.85 –$1.05	$0.85 –$1.05	$0.85 –$1.05
Bunker oil, 14-18 per bbl.	$0.60 –$0.85	$0.64 –$0.85	$0.64 –$0.85
Fuel oil, 14-18 per bbl.	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosine, 38-40 w.w., 125-150 flash, per gal.	5.00 – 6.00	5.00 – 6.00	5.00 – 6.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Gasoline, 400 e.p. blend	$1.85 –$2.00	$1.85 –$2.00	$1.85 –$2.00
Kerosine, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Dec. 8 Crude &/or Fuel	Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	21	18
Gulf to U. K. or Continental ports*	11	†10
North Atlantic to U. K. or Continental ports*	9/6	†8/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.50	$0.45–$0.50
Gulf to North Atlantic ports (not E. of N. Y.)**	14–16	14–18

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Two ports discharged.

A ONE-MAN JOB
Save labor . . . prevent handling damage . . . save space . . . rotate stock . . . keep drums clean . . . reduce fire hazard . . . prevent leakage . . . maintain orderly warehouse.
It is only a one-man job with
ECONOMY
BARREL RACKS
and
LIFTERS
Send for the "Economy Picture Book"—a picture story of warehouse handling.
THE TEXAS COMPANY-U.S.A.
TEXACO
PETROLEUM PRODUCTS
ECONOMY
ENGINEERING COMPANY
2663 West Van Buren Street Chicago, Illinois

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect Dec. 8, 1930, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline Total T.W	Tax	T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	11.5	2	13.5	15.5	11.5
Newark, N. J.	10.5	2	12.5	14.5	10.5
Annapolis	12	4	16	17	11
Baltimore, Md.	11.2	4	15.2	16.2	9.5
Cumberland, Md.	13	4	17	18	12
Washington, D. C.	11.7	2	13.7	14.7	10.7
Danville, Va.	12.8	5	17.8	18.8	11.8
Norfolk, Va.	11.3	5	16.3	17.3	10
Richmond, Va.	11.7	5	16.7	17.7	10.7
Roanoke, Va.	13	5	18	18	12
Petersburg, Va.	12.3	5	17.3	18.3	11.3
Charleston, W. Va.	12.5	4	16.5	17.5	11.5
Keyser, W. Va.	13.1	4	17.1	18.1	12.1
Parkersburg, W. Va.	11.2	4	15.2	16.2	10.2
Wheeling, W. Va.	12.4	4	16.4	17.4	11.4
Raleigh, N. C.	13.2	5	18.2	19.2	12.2
Charlotte, N. C.	13.3	5	18.3	19.3	12.3
Hickory, N. C.	13.6	5	18.6	19.6	12.6
Mt. Airy, N. C.	13.5	5	18.5	19.5	12.5
Salisbury, N. C.	13.5	5	18.5	19.5	12.5
Charleston, S. C.	11.3	6	17.3	18.3	10.3
Columbia, S. C.	13.2	6	19.2	20.2	12.2

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers only thru S. O. New Jersey territory, except Washington, D. C. where discount is 3c.

CONTINENTAL OIL

Denver, Colo.	12	4	16	19	13.5
Pueblo, Colo.	13	4	17	20	13.5
Grand Junc., Colo.	14	4	18	19	17
Casper, Wyo.	13	4	17	20	12
Cheyenne, Wyo.	14	4	18	21	13.5
Butte, Mont.	14	5	19	22	18
Helena, Mont.	15	5	20	23	18
Salt Lake City, Utah	16.5	3½	20	23	17
Boise, Ida.	18.5	5	23.5	....	19
Twin Falls, Ida.	18.5	5	23.5	....	19
Albuquerque, N. M.	11	5	16	18	14

S. O. CALIFORNIA

	Tax	Retail Price	Posted Wholesale	
Phoenix, Ariz.	4	22.5	19.5	20
Los Angeles, Cal.	3	20.5	22.5	15.5
Fresno, Cal.	3	21	23	17
San Francisco, Cal.	3	21	23	15.5
Reno, Nev.	4	26	28	19
Portland, Ore.	4	20.5	24.5	16.5
Seattle, Wash.	3	20	23.5	16.5
Spokane, Wash.	3	22	27.5	20.5
Tacoma, Wash.	3	18.5	23.5	16.5

Note: 6c per gal. discount to dealers off posted wholesale price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only. This discount determines net t.w. price.

S. O. LOUISIANA

	Posted Retail T.W.	Tax	Total Posted Retail T.W.	Posted Retail S.S.	T.W.
Little Rock, Ark.	10	5	15	16	12
Alexandria, La.	11.5	*6	17.5	18.5	†13
Baton Rouge, La.	11.5	5	16.5	17.5	†13
New Orleans, La.	9.5	*6	15.5	16.5	†12
Lake Charles, La.	11.5	*6	17.5	18.5	†13
Shreveport, La.	11.5	5	16.5	17.5	†13
Lafayette, La.	11.5	*6	17.5	18.5	†13
Bristol, Tenn.	14	5	19	20	14
Chattanooga, Tenn.	12.5	5	17.5	18.5	13
Knoxville, Tenn.	13	5	18	19	15
Nashville, Tenn.	12	5	17	18	15
Memphis, Tenn.	11	5	16	17	12.5

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price; to consumers at service stations when cash is paid for purchases at time of delivery, 1c per gal. off posted retail s.s. price.

***Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.**

†Kerosine price in Louisiana includes 1c state tax.

S. O. KENTUCKY

Ashland, Ky.	13	5	18	20	15
Catlettsburg, Ky.	13	5	18	20	15
Lexington, Ky.	12	5	17	18	14.5
Louisville, Ky.	11	5	16	18	12

Latest Changes in Tank Wagon Prices

Gasoline

S. O. Louisiana—T.w. and s.s. gasoline up 1c, thru Louisiana, due to increase in state gasoline tax to 5c, **Nov. 27.**

T.w. and s.s. up 1c, thru Louisiana, **Dec. 3.**

Continental Oil—S.s. only cut 2c, Grand Junction, to 19c, t.w. remaining unchanged at 18c, **Nov. 28.**

T.w. and s.s. cut 2.5c, Helena, to 20c and 23c, **Nov. 8.**

S. O. Kentucky—T.w. cut 1c, s.s. cut 2c, Montgomery, to 17c and 18c respectively, including 4c state tax, **Dec. 6.**

T.w. cut 1c, s.s. cut 2c, Birmingham, to 17c and 18c respectively, including 4c state and 1c city tax, **Dec. 8.**

Kerosine

Continental Oil—Kerosine cut 1c, Albuquerque, to 14c t.w., **Nov. 28.**

	Gasoline Total T.W.	Tax	T.W.	S.S.	Oil T.W.
Covington, Ky.	13	5	18	20	14.5
Clarksdale, Miss.	13	5	18	18	11
Gulfport, Miss.††	13	5	18	18	13
Jackson, Miss.	10	5	15	17	13
Natchez, Miss.	13	5	18	20	13
Vicksburg, Miss.	13	5	18	20	13
Birmingham, Ala.‡‡	13	4	17	18	14.5
Mobile, Ala.‡	13	4	17	19	10.5
Montgomery, Ala.*	13	4	17	18	15
Atlanta, Ga.	14	6	20	22	†13.5
Augusta, Ga.	14	6	20	22	†15.5
Macon, Ga.	14	6	20	22	†13
Savannah, Ga.	12	6	18	20	†14
Jacksonville, Fla.	11	6	17	19	14
Miami, Fla.	13	6	19	21	14
Tampa, Fla.	12	6	18	20	13
Pensacola, Fla.**	14	6	20	21	13.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*****Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

******Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax

S. O. NEBRASKA

	Gasoline Total T.W.	Tax	T W.	S.S.	Oil T.W.
Omaha, Neb.	13.25	4	17.25	18.25	11.25
McCook	14.75	4	18.75	20.75	12.75
Norfolk	13.25	4	17.25	17.25	11.75
North Platte	14.75	4	18.75	20.75	12.50
Scottsbluff	14.75	4	18.75	20.75	12.25

Note: Discounts: 1c per gal. off tank wagon price of gasoline for 1,000 gallon dumps per month to consumers taking tank wagon delivery only.

S. O. INDIANA

Chicago, Ill.	13	3	16	17	11
Decatur, Ill.	13.4	3	16.4	16	11
E. St. Louis, Ill.	12.7	3	15.7	14.7	10.2
Joliet, Ill.	13.4	3	16.4	17.4	11
Peoria, Ill.	12	3	15	14	11
Quincy, Ill.	13.2	3	16.2	17.2	10.8
Indianapolis, Ind.	12.9	4	16.9	17.9	12.1
Evansville, Ind.	13.1	4	17.1	18.1	11.9
South Bend, Ind.	13.4	4	17.4	18.4	12.2
Detroit, Mich.	13.8	3	16.8	12.5	12.7
Grand Rapids, Mich.	12.7	3	15.7	16.7	12.6
Saginaw, Mich.	13.9	3	16.9	14.3	12.8
Green Bay, Wisc.	13.6	2	15.6	16.6	11.4
Madison, Wisc.	13.3	2	15.3	15.3	11.1
Milwaukee, Wisc.	13.1	2	15.1	15	10.9
La Crosse, Wisc.	14.2	2	16.2	17.2	12
Minneapolis, Minn.	14	3	17	17	11.9
Duluth, Minn.	14.5	3	17.5	17.5	11.9
Mankato, Minn.	11	3	14	14	11.7
Des Moines, Ia.	12.5	3	15.5	15.5	11.3
Davenport, Ia.	13.5	3	16.5	16.5	11.3
Sioux City, Ia.	13.1	3	16.1	15.9	10.9
Mason City, Ia.	13.5	3	16.5	17.5	11.3
St. Louis, Mo.	*10.9	2	12.9	13.9	10.3
Kansas City, Mo.	†12.9	2	14.9	14.9	9.6
St. Joseph, Mo.	†13.5	2	15.5	11.9	10.1
Fargo, N. D.	15.9	3	18.9	19.9	13.9
Grand Forks, N. D.	16.2	3	19.2	20.2	14.2
Minot, N. D.	15.9	3	18.9	19.9	13.9
Pierre, S. D.	14	4	18	19	12.4
Huron, S. D.	13.5	4	17.5	17.5	12.7
Wichita, Kans.	11.8	3	14.8	13.8	9.8
Bartlesville, Okla.	11.5	4	15.5	18.5	9.5

S. O. Indiana's quantity contract price schedule thru territory (except in Chicago, which see below) on tank truck deliveries of gasoline, figured from the service station price is 3c for 500 gal. or more a month; and 4½c for 75,000 gals. or more a month.

In Chicago and vicinity, these discounts apply: Over 500 gals. per month, 4c per gal. off service station price; over 1,000 gals. per month, 5c per gal. off service station price.

*****Includes city tax of ½c.

†Includes city tax of 1c.

S. O. OHIO

Ohio statewide	14	4	18	19	15
Preble County	14	4	18	18	15
Lucas County	11	4	15	15	15
Butler County	11	4	15	15	15

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices. In counties where prices are below statewide schedule, discount is 3c per gal. off t.w. price.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

MAGNOLIA PETROLEUM

Muskogee, Okla.	11	4	15	18	9
Oklahoma City	9	4	13	16	10
Tulsa, Okla.	10	4	14	18	10
Fort Smith, Ark.†	11.5	4	15.5	16.5	12
Little Rock, Ark.	9	5	14	15	12
Texarkana, Ark.*	13	4	17	17	12
Dallas, Tex.	10	4	14	17	11
Fort Worth, Tex.	10	4	14	17	10
Houston, Tex.	11	4	15	19	11
San Antonio, Tex.	9	4	13	17	11
El Paso, Tex.	12	4	16	20	12

*****Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 3/50c on both.

Kerosine inspection fees only, per gallon; Iowa 7/100c; Michigan 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect Dec. 8, 1930, as Posted by Principal Marketing Companies

S. O. NEW YORK

	T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings	12.3	2	14.3	16.3	10
Borough of Richmond	13.7	2	15.7	17.7	11.7
Albany, N. Y.	13.6	2	15.6	17.6	12.6
Buffalo, N. Y.	12.8	2	14.8	16.8	9
Rochester, N. Y.	13	2	15	17	9
Syracuse, N. Y.	15	8 2	17.8	19.8	12.8
Boston, Mass.	12.5	2	14.5	16.5	10
Augusta, Me.	15.8	4	19.8	21.8	12.8
Manchester, N. H.	15.4	4	19.4	21.4	10
Burlington, Vt.	16.3	4	20.3	22.3	13.3
New Haven, Conn.	15.6	2	17.6	19.6	12.6
Providence, R. I.	10.7	2	12.7	14.7	10

Note: S. O. New York allows 3c off t.w. price to dealers in New York City, and 2c off t.w. price thru rest of territory.

ATLANTIC REFINING

Pittsburgh, Pa.	14	*	14	19	12
Philadelphia, Pa.	14	*	14	19	12
Allentown, Pa.	14	*	14	19	12
Erie, Pa.	14	*	14	18	12
Scranton, Pa.	14	*	14	19	12
Altoona, Pa.	14	*	14	19	12
Dover, Del.	14	3	17	19	12
Wilmington, Del.	14	3	17	19	12
Boston, Mass.	12.5	2	14.5	16.5	10
Springfield, Mass.	15.5	2	17 5	19.5	10
Worcester, Mass.	15.3	2	17.3	19.3	10
Fall River, Mass.	12.1	2	14.1	15.1	10
Providence, R. I.	10.7	2	12.7	14.7	10
Hartford, Conn.	15.5	2	17.5	19.5	10
New Haven, Conn.	15 6	2	17 6	19.6	10
Atlantic City, N. J.	12 5	2	14.5	15.5	11.5
Camden, N. J.	11.6	2	13.6	14.6	10.6
Trenton, N. J.	12	2	14	15	11
Annapolis, Md.	12	4	16	17	11
Baltimore, Md.	11 2	4	15.2	16.2	10.2
Hagerstown, Md.	12 7	4	16.7	17.7	11.7
Richmond, Va.	11.7	5	16.7	17.7	10.7
Wilmington, N. C.	11.4	5	16.4	17.4	12.4
Brunswick, Ga.	14	6	20	22	**15
Jacksonville, Fla.	13	6	19	19	14

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers: discount to commercial accounts under contract for one year in accordance with Code of Ethics. Erie has dealer discount of 4c off t.w. price, effective May 28.

*3-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosine prices include 1c state tax.

NAPHTHA PRICES

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	12 ?	14 7	16.2
Detroit	15.4	16.9	17.7
Kansas City	†13.9	†15.4	†16.2
Milwaukee	14.4	*17.9	*18.7
Minneapolis	**18.7	**20.2	**21
St. Louis	13.6	15.1	15.9
New York		10	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)

New York harbor	10 00
Philadelphia district	10.00
Providence	10.50

Tank Wagon or Steel Barrels

New York City	15–16
Syracuse	17–18
Rochester	18
Buffalo	16–18
Providence	17–18
Boston	18–19
Bridgeport	16–18
Newark	14–16
Philadelphia	15
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	ONTARIO T.W.	Tax	Gasoline Total T.W.	S.S.	Oil T.W.
Toronto	18.5	5	23.5	27	19.5
Ottawa	18.5	5	23.5	27	19.5
North Bay	21.5	5	26.5	32	26
Ft. William	21.5	5	26.5	30	21.5
Border Cities, including Windsor	17.5	5	22.5	26	18.5

	T.W.	Tax	T.W.	S.S.	T.W.
MANITOBA					
Winnipeg	20	5	25	29	20.5
SASKATCHEWAN					
Regina	25	5	30	34	25
ALBERTA					
Edmonton	26.5	5	31.5	35	26.5
Calgary	22.5	5	27.5	31	22.5
BRITISH COLUMBIA					
Vancouver	23	5	28	32	24
QUEBEC					
Montreal	19.5	5	24.5	28	20.5
Quebec City	20.5	5	25.5	29	21.5
Three Rivers	20.5	5	25.5	29	21.5
NEW BRUNSWICK					
St. John	19	5	24	28	21
Moncton	19	5	24	28	21
NOVA SCOTIA					
Halifax	19	5	24	28	21
PRINCE EDWARD ISLAND					
Charlottetown	19	5	24	28	21

Note: In districts surrounding these points 1c additional is added to city price.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Dec. 8, 1930

	T.W.	Tax	T.W.
Newark, N. J.	17.4	*	17.4
Baltimore, Md.	16.2	4	20.2
Washington, D. C.†	18.0	2	20.0

*New Jersey road tax of 2c does not apply on aviation gasoline, exemption being claimed at time of purchase.

†Price at Washington is on Stanavo Aviation gasoline which sells at a ½c premium over "Standard" aviation gasoline.

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston	21	2	23

S. O. PENNSYLVANIA

Philadelphia, Pa.	18	3	21
Pittsburgh, Pa.	18	3	21
Altoona, Pa.	18	3	21

S. O. OHIO

Thru Ohio	16	4	20

Discounts given by S. O. Ohio: For airport delivery only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per month, 4c.

S. O. INDIANA

Chicago	16	3	19
Indianapolis, Ind.	16.3	4	20.3
Detroit, Mich.	16.8	3	19.8
Milwaukee, Wis.	16.1	2	18.1
Minneapolis, Minn.	17.2	3	20.2
St. Louis, Mo.	15.4	2½	17.9
Kansas City, Mo.	15.9	3	18.9
Fargo, N. D.	18.9	3	21.9
Huron, S. D.	17.3	4	21.3
Wichita, Kan.	14.8	3	17.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. St. Louis tax of 2½c includes ½c city tax and Kansas City tax includes 1c city tax.

S. O. LOUISIANA

New Orleans, La.	17	6	23
Nashville, Tenn.	20	5	25
Memphis, Tenn.	19	5	24

2c per gal. discount off above t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

2c per gal. refund to resellers.

CONTINENTAL OIL CO.

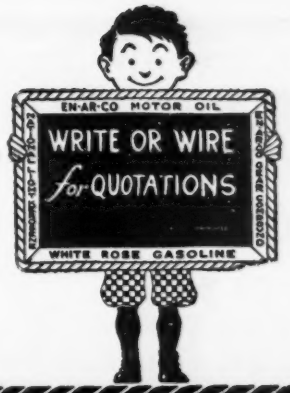
*Denver, Col.	15	4	19
Cheyenne, Wyo.	17	4	21
Helena, Mont.	23.5	5	28.5
Salt Lake City, Utah	19.5	3.5	23
†Albuquerque, N. M.	15	5	20
Boise, Ida.	21.5	5	26.5

*1c per gal. discount to dealers at Denver. †2c per gal. commercial discount is given off s.s. price a Albuquerque; disoount off t.w. price eliminated Sept. t

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.



En-ar-co
MOTOR OIL
White Rose
GASOLINE

YOU will make money if you handle these nationally advertised brands.

All grades of lubricating oils and greases.

The National Refining Co.
Cleveland, Ohio

OIL PRICE HANDBOOKS

HAVE you a complete record of REFINERY prices; TANK WAGON markets; EXPORT prices; CRUDE prices—

For quick reference and comparison with today's prices?

The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9" x 6"—146 pages.

Oil Price Handbook for 1929 .....$7.50
Oil Price Handbook for 1928 .....$5
Oil Price Handbook for 1927 .....$5
Oil Price Handbook for 1926 .....$5
Oil Price Handbook for 1925 } $6
Oil Price Handbook for 1924 }

Send for these OIL PRICE HANDBOOKS *now*, before they are all gone.

NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

Keeps stations spic and span

CLEAN, attractive filling stations draw the customers. For the motorist knows that where care is taken to keep everything spic and span, high class products and service are most likely to be found.

Pumps, oil bottles, service station cans, driveways, station paintwork and windows cleaned the Oakite way will enable you to maintain an attractive station at a fraction of the usual cleaning cost. Write for booklet telling how and why Oakite materials and methods will lighten your cleaning tasks.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada.

Manufac tured only by

OAKITE PRODUCTS, INC.
42C Thames St., New York, N. Y.

OAKITE
Industrial Cleaning Materials and Methods

PETROLEUM PRODUCTS
From All Fields

Carloads, Tank Cars, and Cargoes
For Domestic or Export

GASOLINE KEROSENE NAPHTHA
CRUDE OIL FUEL OIL GAS OIL FURNACE OIL
CYLINDER STOCKS
UNFILTERED AND FILTERED
BRIGHT STOCKS
COLD SETTLED AND CENTRIFUGED
PALE — RED OILS
WAX — PETROLATUM
TECHNICAL WHITE OILS
WHITE MINERAL OILS

For 35 years of reliability, service and integrity— this Company enjoys an International Reputation

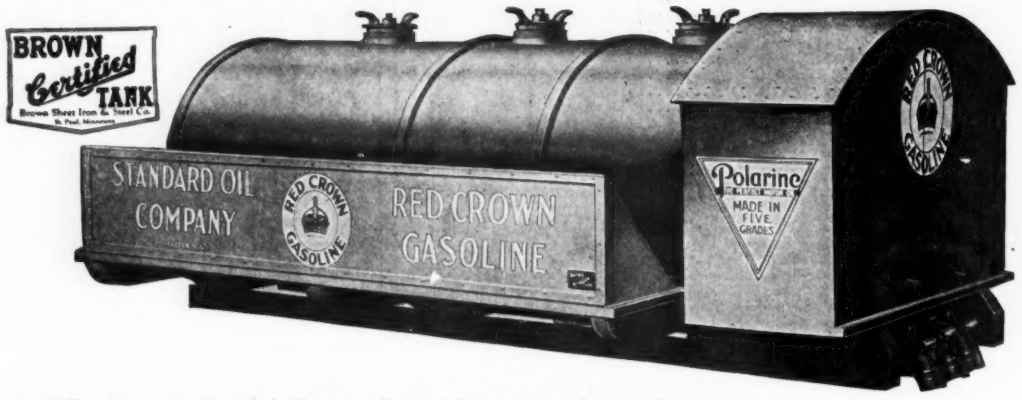
JAMES B. BERRY SONS' CO., INC.
General Office—Oil City, Pa.

District Offices at
New York, Philadelphia, Boston, Chicago
London — Hamburg

Cable Address—JASBER Oil City *All Codes*

WHY A BROWN TANK IS CERTIFIED OIL-TIGHT

First—Over 15 years of practical experience in building.
Second—Guaranteed Thickness Material of proper analysis.
Third—Correct design to handle the load.
Fourth—They are built the right way not the cheapest way.



Through many years of experience in building oil equipment, we know your problems in every detail.

Our exceptional manufacturing facilities enable us to give the best kind of service.

A specially constructed tank built according to the purchaser's specifications.
The Standard Oil Company have several hundred of these in service.

BROWN SHEET IRON & STEEL CO. **ST. PAUL, MINN.**

Canadian Associate: Canadian Brown Steel Tank Co., Ltd., Brandon, Manitoba

TEAR OUT THIS COUPON AND MAIL IT TODAY

We are interested in your tanks. Send your catalog and prices.

Make of Truck..... Year..... We operate..... (number) Tank Trucks.

Other equipment on which you may send prices.....

Name..... Address.....

Crude Oil Prices (in Effect Dec. 8, 1930)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Bradford—Allegheny district (posted by Tide Water Pipe Co., Ltd.) (Effective Nov.12,1930) $2.15
Penna. Grade Oil in National Transit Lines (Effective Nov. 12, 1930) *1.85
Penna. Grade Oil in Southwest Penna. Pipe Lines (Effective Nov. 12, 1930) 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) (Effective Nov. 12, 1930) 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) (Effective Nov. 12, 1930) 1.45
Wayne district crude in Cumberland lines (West Virginia) (Effective Oct. 29, 1930) 0.97
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Oct. 28, 1930) 1.25
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Oct. 29, 1930) 1.10
Somerset Oil in Eureka Pipe Lines (Effective Oct. 29, 1930) 0.94
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929) $0.60

*Oil run prior to July 1, 1929 is 5c less per bbl.

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Nov. 10, 1930) $1.00

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon), effective Oct. 28, 1930, same gravity and price schedule as Prairie posts in Oklahoma and Kansas, which see below.

(Posted by Pure Oil Co.)

Midland, Midland County (Oct. 28, 1930) $1.10

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Oct. 28, 1930

Wooster	$1.35	Princeton	$1.30
Lima	1.10	Illinois	1.30
Waterloo	1.20	Plymouth	0.88
Indiana	0.87	West Kentucky	1.15

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Oct. 28, 1930

Petrolia $1.50
Oil Springs 1.57

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Nov. 1, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Oct. 25, Stanolind Crude Oil Purchasing Co. same schedule in Oklahoma-Kansas as Prairie. On Oct. 27, The Texas Co. met Prairie prices in Oklahoma, and on Oct. 28, in North Texas and North Central Texas.

Humble Oil & Refining Co. Prices

Effective Oct. 28, 1930

In Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona fields, all in Texas, same prices as Prairie, which see above.

Magnolia Petroleum Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective Oct. 28, 1930

Magnolia posts same prices in all three states as Prairie, except these lower grades:

Below 26	$0.53	27-27.9	$0.61
26-26.9	0.57	28-28.9	0.65

Effective Oct. 28, 1930

Corsicana heavy	$0.75
Luling	0.75
Mirando	0.75
Darst Creek, 60° and above	0.90

Carter Oil Co.

(Oklahoma and Kansas)

Oct. 27, 1930, same schedule as Prairie, which see above.

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Hutchinson and Carson Counties

Below 29	$0.45	35-35.9	$0.72
29-29.9	0.49	36-36.9	0.75
30-30.9	0.53	37-37.9	0.78
31-31.9	0.57	38-38.9	0.81
32-32.9	0.61	39-39.9	0.84
33-33.9	0.65	40 and above	0.87
34-34.9	0.69		

Gray County:

Below 29	$0.50	35-35.9	$0.77
29-29.9	0.54	36-36.9	0.80
30-30.9	0.58	37-37.9	0.83
31-31.9	0.62	38-38.9	0.86
32-32.9	0.66	39-39.9	0.89
33-33.9	0.70	40 and above	0.92
34-34.9	0.74		

Above prices met by Magnolia and The Texas Co. on Oct. 28 in Hutchinson, Carson and Gray counties.

Wheeler County: Posted by Magnolia Pet. Co. Effective Apr. 10. Humble withdrew Wheeler county postings Apr. 10.

Below 30	$0.755	37-37.9	$1.11
30-30.9	0.805	38-38.9	1.145
31-31.9	0.855	39-39.9	1.18
32-32.9	0.905	40-40.9	1.215
33-33.9	0.955	41-41.9	1.25
34-34.9	1.005	42-42.9	1.285
35-35.9	1.04	43-43.9	1.32
36-36.9	1.075	44 and above	1.355

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective Oct. 28, 1930

Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., also Lea County, N. Mex.

Below 25	$0.50	31-31.9	$0.64
25 25.9	0.52	32-32.9	0.66
26-26.9	0.54	33-33.9	0.68
27-27.9	0.56	34-34.9	0.70
28-28.9	0.58	35-35.9	0.72
29-29.9	0.60	36 and above	0.74
30-30.9	0.62		

Winkler and Pecos counties, Tex.:

Effective Oct. 28, 1930

Below 25	$0.55	31-31.9	$0.69
25-25.9	0.57	32-32.9	0.71
26-26.9	0.59	33-33.9	0.73
27-27.9	0.61	34-34.9	0.75
28-28.9	0.63	35-35.9	0.77
29-29.9	0.65	36 and above	0.79
30-30.9	0.67		

Oct. 28, 1930, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

Oct. 28, Magnolia same prices in Winkler, Crane, Upton, Howard, Glasscock and Mitchell counties.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Oct. 28, 1930

Mirando	$0.75
Salt Flat	0.90
Darst Creek	0.90
Pettus, Bee County	1.10

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto, Sabine, Cotton Valley, Sarepta and Carterville.

Effective Oct. 30, 1930

Below 29	$0.65	35-35.9	$0.92
29-29.9	0.69	36-36.9	0.95
30-30.9	0.73	37-37.9	0.98
31-31.9	0.77	38-38.9	1.01
32-32.9	0.81	39-39.9	1.04
33-33.9	0.85	40 and above	1.07
34-34.9	0.89		

Smackover, all grades	$0.70
Bellevue (Oct. 30)	1.00
*Urania, La. (Oct. 30, 1930)	0.75
†East El Dorado (Calion) (Oct. 30)	0.70

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

Oct. 28, 1930, The Texas Co. same schedule in Louisiana as Standard.

Oct. 30, Magnolia met Standard schedule in Louisiana-Arkansas fields except it posts the same low grades in La.-Ark. as in Mid-Continent.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective Oct. 30, 1930

Below 29	$0.54	31-31.9	$0.66
29-29.9	0.58	32 and above	0.70
30-30.9	0.62		

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Oct. 28, 1930

Grades A	$1.00	32-32.9	$1.06
Grades B:		33-33.9	1.08
Below 25	0.75	34-34.9	1.10
25-25.9	0.92	35-35.9	1.12
26-26.9	0.94	36-36.9	1.14
27-27.9	0.96	37-37.9	1.16
28-28.9	0.98	38-38.9	1.18
29-29.9	1.00	39-39.9	1.20
30-30.9	1.02	40 and above	1.22
31-31.9	1.04		

On Oct. 28, The Texas Co. posted same prices on Grades A and B Gulf Coast crude as Humble.

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Humble, Pierce Junction, Sugarland, Refugio county, and Raccoon Bend. All other fields are Grades A only.

Specifications for Grade "A" crude: Gravity: 25° and below, at 60° F; Viscosity: not less than 100 seconds at 100° F. Saybolt.

Sulfur: not over .4%.

Grade "B" includes all Coastal crude which does not meet the test for "A" grades.

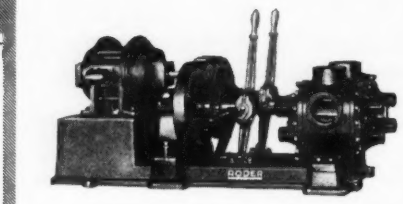
Publish Economic Surveys

NEW YORK, Dec. 8.—A special bulletin has been published by the American Petroleum Institute containing in full the two reports of economic conditions in our industry presented at the recent Chicago meeting. One report was prepared by the committee on petroleum economics of the Federal Oil Conservation Board. The other was prepared by a statistical sub-committee of the institute. Both report on conditions in the period from Oct. 1, 1930, to Apr. 1, 1931.

RICHMOND, Va.—The Continental Oil Co. has been awarded a contract to supply the city with 1,000,000 gallons of gas oil for the city gas works. The company secured the contract on a bid of 4 cents per gallon. The oil will supply the city's needs for the first quarter of 1931.

Trinidad Gasoline Makes Debut in Britain

LONDON—A new motor spirit known as "Regent" has just been placed on the British market, and is being advertised as "the Empire Spirit." It is being distributed by Trinidad Leaseholds, Ltd., and is gasoline refined in Trinidad. It will be in two grades—Super and Commercial—retailing respectively at 1s. 2½d. and 1s. 1d. (29 cents and 26 cents) per gallon.



These Pumps work faster, last longer

Roper Pumps are built on the simple and efficient rotary gear principle — only two working parts. That's why they handle gasoline and oils of all viscosities at record breaking speed — and stand up for years under continuous service.

Herringbone gears regular—fire wall extension if desired. Outfits furnished with as many as six pumps mounted on one bed plate, operating independently or simultaneously using one or more liquids. Strictly high quality pumps with low first cost, low operating cost and practically no maintenance cost. Investigate!

Catalog 58N contains complete details on both power and hand pumps for petroleum products. Write today for your copy—Catalog 58N.

GEO. D. ROPER CORP.
ROCKFORD, ILLINOIS

Dallas—10th Floor, Santa Fe Bldg.
Chicago—6 E. Lake Street
Philadelphia—709 Arch Street
San Francisco—2490 Chestnut St.

ROPER

GRANBERG PETROLEUM METERS

Are Precision Instruments of Established Merit

They are extensively used on Tank Trucks, Truck Loading Racks and Tank Car Unloading Lines and are universally satisfactory wherever it is desirable to secure accurate measurements.

We have made a technical and practical study of the problem of accurately measuring petroleum oils and are prepared to give expert advice and assistance on the subject.

Engineers from our home office are permanently located in the Middle West and on the Atlantic Coast, for the purpose of helping our customers with their metering problems. It will pay you to use our meters and profit by our knowledge and experience.

GRANBERG METER CORPORATION

79 New Montgomery St. *"Precision Meters for Petroleum Oils"* **San Francisco, Calif.**

Aqua Systems Inc., 2 Lafayette St., N. Y. City, *Distributors for New York Metropolitan District*
National Pumps Corp., Dayton, Ohio, *Manufacturers of Granberg Meter Equipped Retail Pumps*

Gott Water Cans & Coolers
Gott
Have a cool supply of clean-pure sparkling water...ready to drink at all times. No matter where you are the GOTT Water Can is health insurance.
Your supply store has them
Gotkool
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
H. P. GOTT MFG. CO. · Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

Trucks

and trailers—their operation and maintenance—how they lower oil transportation costs and how to sell from the truck seat—33 articles have been devoted exclusively to truck operation in the oil industry in this year's issues of National Petroleum News. They are listed here for your file reference:

1930

Cost of lettering on trucks should be charged to advertising — Nov. 26, p. 67
Study of auto routes cuts truck delivery costs — Nov. 19, p. 68
Semi-trailers deliver more gasoline with fewer pieces; what one company has found — Nov. 12, p. 267
Operating costs; trucks cut bulk station duplications, stocks — Nov. 12, p. 260
Has world's largest tank truck — Nov. 12, p. 259
Tank truck of yesterday, today, tomorrow — Nov. 12, p. 253
Use of aluminum grows in transportation equipment — Nov. 12, p. 137
Trucks as rolling kitchens help sell liquefied gas — Oct. 29, p. 122
Has Diesel-powered tank truck — Oct. 1, p. 77
Aluminum truck tanks pass fire, drop, hydrostatic tests — Sept. 10, p. 23
Truck design discussed at A.P.I. motor group meeting — Sept. 10, p. 33
Three-unit tractor-semitrailer cuts mileage costs — Aug. 27, p. 85
Vapor locking tendencies of automotive fuel systems — Aug. 20, p. 64
New York tank racket to be reopened by tank company — Aug. 13, p. 36
Trailer made from old Ford is sturdy — July 30, p. 60
Tail light on truck trailer is effective — July 30, p. 62
Accounting of truck costs based on actual expenses — July 30, p. 99
Trucks haul tankcar of gasoline per day — June 25, p. 105
Interstate war in southwest involves trucks — May 14, page 30
Refiner-Marketer repairs own trucks in own repair shop — Apr. 23, p. 77
Tests of aluminum semi-trailers show greater speed than steel — March 26, p. 35
Care and maintenance of motor vehicles important — March 19, p. 87
Salary, commissions or both to truck drivers? — March 19, p. 217
Tank truck salesmen, know your products and territory! — March 19, p. 171
Redesigning truck mountings to reduce deadweight — March 19, p. 182
What's new in trucks, truck tanks and trailers — March 19, p. 231
Aluminum tanks and semi-trailers to be given hill tests — March 12, p. 28
Advantages of tractor-trailers told to jobbers — March 5, p. 27
Tank truck as advertising medium — Feb. 26, p. 34
Safety of aluminum for tanks to be investigated — Feb. 12, p. 82
Station sales boosted thru road service truck — Feb. 5, p. 88
Trucking gasoline in Mid-Continent cheaper than rail — Jan. 29, p. 71
Serviceability of aluminum truck tanks demonstrated — Jan. 1, p. 29

Back copies of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of National Petroleum News complete.

National Petroleum News
Main Office: 1213 West Third St
Cleveland, Ohio

Crude Oil Prices (in Effect Dec. 8, 1930)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective Oct. 27, 1930)

Salt Creek 29-29.9	$0.69
" " 30-30.9	0.73
" " 31-31.9	0.77
" " 32-32.9	0.81
" " 33-33.9	0.85
" " 34-34.9	0.89
‡Salt Creek 35-35.9	$0.92
" " 36-36.9	0.95
" " 37 and above	0.98
Elk Basin	1.25
Grass Creek light	1.25
Big Muddy	1.00
Lance Creek	1.33
Rock Creek	1.01
Mule Creek	1.20
Rex Lake	1.10
Pondera	1.45
‡Osage	0.85
‡Cat Creek, Mont	1.25
Sunburst, Mont	1.55
‡Hogback, N. Mex	1.40
Artesia, N. Mex	0.75

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

(Effective Sept. 15, 1930)

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach Inglewood* Olinda-Brea Canon*	Athens Rosecrans Dominguez	Elwood Terrace	Torrance Richfield	Whittier La Habra	Montebello	Coyote	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elk Hills Buena Vista Hills Lost Hills	Coalinga	Wheeler Ridge	‡Kettleman Hills	Orcutt (Santa Maria) (Union Oil Co.)	Santa Paula (Ventura) (Union Oil Co.)	Ventura Avenue (Associated Oil Co.)
14–14.9**	$0.70	....	....	$0.70	$0.70	$0.70	$0.70	....	$0.55	$0.55	$0.55	$0.55	....	$0.55	$0.70	$0.70
15–15.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	....	.55	.70	.70
16–16.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	$1.65	.55	.70	.70
17–17.9	.70	....		.70	.70	.70	.70	....	.55	.55	.55	.55	for	.55	.70	.70
18–18.9	.76	....		.76	.76	.71	.76	....	.55	.62	.62	.62	55°	.65	.75	.76
19–19.9	.82	....		.82	.82	.77	.82	....	.55	.70	.70	.70	gravity	.70	.80	.82
20–20.9	.88	....		.88	.87	.83	.87	....	....	.78	.78	.78	and	.78	.85	.88
21–21.9	.94	....	F.o.b. ships	.94	.93	.90	.93	$0.92	....	.86	.86	.86	over	.90	.90	.91
22–22.9	1.00	....	....	1.00	.98	.97	.98	.95	....	.94	.94	.94	....	.95	.97	.94
23–23.9	1.07	....	....	1.07	....	1.05	1.04	1.01	....	1.02	1.02	1.02	....	1.02	1.05	1.00
24–24.9	1.12	1.12	....	1.12	....	1.08	1.08	1.05	....	1.06	1.04	1.04	....	1.08	1.07	1.05
25–25.9	1.17	1.17	....	1.17	....	1.11	1.12	1.09	....	1.10	1.06	1.06	....	1.11	1 09	1.10
26–26.9	1.22	1.22	....	1.22	....	1.15	1.16	1.13	....	1.14	1.08	1.08	....	1.15	1.12	1.15
27–27.9	1.26	1.27	....	1.26	....	1.19	1.21	1.18	....	1.18	1.11	1.10	....	....	1.16	1.19
28–28.9	1.30	1.32	....	1.30	....	1.23	1.25	1.23	....	1.23	1.15	....	....	....	1.20	1 23
29–29.9	1.34	1.37	....	†1.34	....	1.26	1.29	1.28	....	1.29	1.19	....	....	....	1.24	1.27
30–30.9	1.38	1.42	....	†1.38	....	1.29	1.33	1.33	....	1.35	1.23	....	....	....	1.29	1.31
31–31.9	1.43	1.47	....	....	....	....	....	1.38	....	1.41	1.27	....	....	....	1.34	1.36
32–32.9	1.48	1.52	....	....	....	....	....	1.43	....	1.47	1.31	....	....	....	1.40	1.41
33–33.9	....	1.57	....	....	....	....	....	1.48	....	1.53	1.35	....	....	....	1.46	1 47
34–34.9	....	1.62	1.32	....	....	....	....	1.53	....	††1.59	1.39	....	....	....	....	1.53
35–35.9	....	1.66	1.39	....	....	....	....	1.58	....	††1.65	1.43	....	....	....	....	1.59
36–36.9	....	1.72	1.46	....	....	....	....	1.63	....	....	....	....	....	....	....	....
37–37.9	....	1.78	1.53	....	....	....	....	1.68	....	....	....	....	....	....	....	....
38–38.9	....	1.84	1.60	....	....	....	....	1.73	....	....	....	....	....	....	....	....
39–39.9	....	1.90	1.66	....	....	....	....	1.78	....	....	....	....	....	....	....	....
40–40.9	....	1.96	1.72	....	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	2.02	1.78	....	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	2.08	1.84	....	....	....	....	....	....	....	....	....	....	....	....	....

*Inglewood prices run only to 28.9 gravity; Olinda-Brea Canon to 31.9 gravity.
†Richfield crude only. ††These two grades apply on Lost Hills only.
**Standard does not contract for crude testing below 14 gravity, but pays 45c per barrel when purchased.
‡Union Oil Co.'s prices on Kettleman Hills crude are, effective Sept. 15: 35-39.5, $1.10; 40-44.9, $1.20; 45-49.9, $1.35; 50-54.9, $1.50; and 55 and above $1.65.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Dec. 8	Dec. 1
Soda Ash light 58% bags, cwt.	$1.32–1.55	$1.32–1.55
Silicate of Soda 60 deg. drums, ...cwt.	$1.75–1.90	$1.75–1.90
Silicate of Soda 40 deg. tank cars....cwt.	$0.80	$0.80
Silicate of Soda 40 deg. drums ....cwt.	$1.05	$1.05
Sal Soda wks	$0.90-1.10	$0.90-1.10
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	11.00-12.50
Sulfur, flowers of....cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks....lb.	2.40-2.45	2.40-2.45

Compounders' Supplies

	Dec. 8	Dec. 1
Vegetable Oils		
Linseed carloads, spot....lb.	9.40	9.60
Tanks, spot	8.80	9 00
Soya Bean, Tank, coast...lb.	7.50	7.50
Oleic Acid		
Distilled, tanks....lb.	7.75	5.75
Distilled, bbls....lb.	8.625	8 625
Saponified, tanks....lb.	7.75	7.75
Saponified, bbls....lb.	8.625	8.625
Lard Oils		
Prime Winter Strained....lb.	14.00	14.00
Extra Winter Strained....lb.	10.25	10.25
Extra....lb.	9.75	9.75
Extra No. 1....lb.	9.25	9.25
No. 1....lb.	9.00	9.00
No. 2....lb.	8.75	8.75
Tallow oil....lb.	9.00	9.00
Neatsfoot Oil		
Pure, bbls....lb.	13.75	13.75
Extra, bbls....lb.	9.50	9.50
No. 1 bbls....lb.	9.25	9 25
Cold Pressed....lb.	16.25	16.25
Fish Oils		
Menhaden Oil Light Pressed....gal.	41–43	41–43
Light Pressed, tank cars, N. Y....gal.	35–37	35–37
Yellow bleached....gal.	38–41	38–41
Whale, extra winter bleached, ...gal.	80	80
Naval Stores		
Steam, distilled turpentine, N. Y....gal.	41–42	43.50-44.50
Steam distilled turpentine, Savannah ....gal.	38	38
Gum turpentine, N. Y...gal.	41	43.50
Gum turpentine, f.o.b. cars Savannah ....gal.	38	38.50
Wood Rosin, N. Y.... bbl.	$5.35	$5.15
Wood Rosin F, Savn'h...bbl.	$4.86	$4.76
Gum Rosin B, N. Y. bbl.	$4.95	$5.10
Gum Rosin B, f. o. b. cars Savannah ....bbl.	$4.20	$4.20
Rosin oil, pure....gal.	56	56
Rosin oil, compounded..gal.	50	50
Pine Tar		
Kiln burnt....bbl.	$13.00-14.00	$13.00-14.00
Retort ....bbl.	$13.50-14.50	$13.50-14.50
Alcohol		
Denatured Formula 5, in bbls., per gal....	46–48	46–48

Federal Body Urged to Preserve Trade Practice Work

WASHINGTON, Dec. 4

INDUSTRY is making an earnest effort to preserve the benefits of the trade practice conference work initiated by the Federal Trade Commission a few years ago.

Three of its representatives appeared before the commission to argue against the proposal of the trade body to revise the rules as adopted by various industries, or even to re-phrase the codes without agreement with the affected industries.

The three attorneys who called upon the trade body to be more than a policeman subject to the beck and call of the Department of Justice, which, in this matter is wholly reactionary and prosecuting attorneyish in attitude, were E. Barrett Prettyman, Washington, Sol Herzog, New York; and William E. Lamb, Chicago.

Before the arguments were made Chairman Ferguson announced a concession to the great volume of objection that has been raised by industry. He said the commission could not force an industry to accept a rule as written by the commission. He admitted that an industry might go ahead and apply a rule if it desired. But he said that, if the commission found itself unable to agree to a rule, it could reject it, or even if a rule had been accepted, the commission could withdraw its approval.

The chairman said the commission felt that some of the rules accepted were violation of the anti-trust laws and that was why it proposed to revise the rules. That proposal, the arguments disclose, was taken by some representatives of industry to indicate the view of the commission that it had the power to revise the rules, even if such revision made it appear that an industry had agreed to a rule when, in fact, it had not done so.

The three representatives pleaded with the commission not to undertake to rephrase the rules agreed upon as an industry, particularly not the rules adopted by them as to price discrimination. They said that each of the industries, in taking part in a trade practice conference, expressed its views as to the significance of price discrimination and that no rephrasing by the commission might undertake could express the view of the industry on that or any other subject.

The three agreed that no rule should be stricken from a code unless, on its face, it was illegal. They also agreed that the commission should make no changes without giving the industry an opportunity to be heard, either in testimony or argument.

Star chamber methods such as the commission has been using in dealing with the codes adopted by 115 industries were denounced, by implication. It was pointed out that, seemingly, the commission had abandoned the work committed to it by the Federal Trade Commission act and had elected to limit its jurisdiction to the Clayton anti-trust law, which limitation caused the observation about the trade body being but an adjunct, so far as it was functioning, to the Department of Justice.

The three attorney representatives noted that changes in the rules made by the commission indicated to them that it was abandoning the desire of the Federal Trade Commission law to create a body that would frustrate unfair methods of competition before they resulted in violations of law and going to the position that it would not undertake anything

(*Continued on Page* 124)

Gulf Coastal Water Shipments—October Compared With September

(All figures in Barrels of 42 Gallons)

Company—Port	Coastwise Refined September	Coastwise Refined October	Exported Refined September	Exported Refined October
Standard of Louisiana, Baton Rouge	548,171.00	532,898.00	785,844.00	533,588.00
The Texas, Company Port Arthur	1,594,066.00	994,348.00	185,132.00	321,605.00
Gulf Refining Co., Port Arthur	1,978,514.83	2,092,385.30	174,763.87	284,893.50
Magnolia Petroleum Co., Beaumont	1,455,602.40	1,077,727.00(a)	.....	.....
Humble Oil & Rfg. Co., Baytown	1,744,996.79	1,235,350.05	1,373,978.08	1,640,753.75
Atlantic Oil Prod. Co., Atreco	4,210.30	.....	.....	.....
Pure Oil Company, Smiths Bluff	539,008.73	373,230.78	.....	.....
TOTALS	7,864,570.05	6,305,939.13	2,519,717.95	2,780,840.25
	Coastwise Crude		**Export Crude**	
Standard of Louisiana, Baton Rouge	255,085.00	139,163.00	.....	79,306.00
The Texas Company, Port Arthur	471,919.00	462,960.00	.....	51,526.00
Gulf Refining Co., Port Arthur	308,004.13	223,278.73	.....	.....
Magnolia Petroleum Co., Beaumont	762,546.35	748,921.68(a)	.....	.....
Humble Oil & Rfg. Co., Texas City	771,255.00	850,399.00	.....	.....
Ingleside	206,249.00	178,395.00	.....	.....
Baytown	76,954.00	.....	.....	.....
Harbor Island	2,179,094.00	2,048,397.00	.....	.....
Atlantic Oil Prod. Co., Atreco	504,681.16	660,284.89	.....	.....
Beaumont	310,641.55	192,196.62	.....	.....
Pure Oil Company, Smiths Bluff	707,929.02	782,323.77	.....	.....
Sun Oil Company, Sabine Pass	993,605.00	.....	.....	.....
TOTALS	7,547,963.21	5,286,319.69	.....	130,832.00

(a)—Magnolia Petroleum Company makes no distinction in reports between coastwise and export shipments.

Build Your Business on Our Reputation for Satisfactory Petroleum Products —a Reputation as Old as the Automobile Industry Itself.

Empire Oil & Refining Company

Subsidiary Cities Service Co.

GENERAL SALES OFFICES—TULSA, OKLA.

New St. Louis Address: 1218 Olive St., Plaza Oil Investment Bldg.

NEW YORK PHILADELPHIA CLEVELAND CHICAGO ST. PAUL
ST. LOUIS KANSAS CITY FT. WORTH TORONTO

Transactions in Oil Shares on New York Stock Exchange

1929 High	1929 Low	1930 High	1930 Low	Listed Shares	Par Value	Company	Div. Rate	Last Paid	Transactions Week Ending Dec. 6 Sales	First	High	Low	Last	Change
42⅝	17½	42¼	20½	922,075	N.P.	Amerada Corp.	50cQ	Oct. 31, 30	2,400	21¼	21¼	21	21⅛	— ⅝
64¾	12½	37	8	209,180	N.P.	American Republics Corp.	....	....	3,100	9⅛	9⅛	8	8	— ⅝
47¼	34½	51	30⅞	2,240,000	$25	Associated Oil	50cQ	Sept. 30, 30	30	....	39	35	35	0
77⅛	30	51⅜	18⅝	2,683,868	25	Atlantic Refining Co.	‡25cQ	Sept. 15, 30	14,700	20⅞	22	20	20	— 1½
49⅛	20	34	12⅝	2,257,108	25	Barnsdall Corp. A.	50cQ	Nov. 6, 30	9,200	14½	15	14⅛	14⅜	— ⅛
34½	25	35	21	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	....	....	....	....	.....
32⅞	12½	20⅜	9¼	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	3,700	10	10	9⅜	10	0
37¾	18	30½	10	4,610,258	N.P.	Continental Oil (Delaware)	.....	.....	29,800	11⅝	12	10⅞	11	— ¾
94¾	42¼	71⅛	28⅛	410,857	$100	General Asphalt Co.	$1Q	Sept. 15, 30	2,100	30	30⅞	28½	29¼	0
109	26	116⅞	33⅛	250,000	100	Houston Oil	....	.....	7,000	42	44¼	39	39⅝	— 1⅜
..	..	10¼	7⅝	....	....	Houston Oil, new	....	.....	11,000	9⅜	10⅜	8⅞	9⅜	— ⅜
39⅜	17¾	32	11⅛	1,379,295	N.P.	Independent Oil & Gas	37½c	Oct. 2, 30	.....	....	....	....	....	.....
53	13⅛	28⅜	3¼	699,066	10	Indian Refining	....	Dec. 15, 20	37,600	4¼	4⅜	4	4	— ¼
51¼	11½	27¾	4	568,816	10	do certificates	....	.....	900	4	4¼	†4	4⅛	0
38⅜	16½	29½	21¼	3,994,150	N.P.	Lago Oil & Transport	....	Aug. 2, 27	.....	....	....	....	....	.....
18	7	12	4¾	1,187,701	N.P.	Louisiana Oil Refining	....	.....	2,800	5⅜	5⅜	4⅞	5	— ⅛
100¼	80	89½	78⅜	40,000	$100	do pfd.	$1.62½Q	Nov. 15, 30	.....	....	....	....	....	.....
18½	5⅞	10⅜	2	330,000	N.P.	Maracaibo Oil Exploration	.....	.....	1,100	2¾	2¾	2⅝	2⅝	— ⅛
295	176	182	150	459,428	$100	Mexican Petroleum	$3Q	Oct. 20, 30	.....	....	....	....	....	.....
105	102	..	..	120,000	100	do pfd.	$2Q	Oct. 20, 30	.....	....	....	....	....	.....
69⅜	9¼	37	9¾	1,244,383	N.P.	Mexican Seaboard Oil	....	Oct. 15, 24	13,300	12¾	14⅜	12⅛	12¼	— ¾
39⅞	22⅛	33	15½	1,899,138	N.P.	Mid-Continent Petroleum	50cQ	Nov. 15, 30	6,700	17¼	17¼	16	16	— ⅜
3⅜	¾	2½	¾	908,171	N.P.	Middle States Oil ctfs.	....	.....	.....	....	....	....	....	.....
..	..	32	16⅜	6,708,086	N.P.	Ohio Oil Co.	50cQ	Sept. 15, 30	25,700	19	19⅜	17⅞	18⅛	— ⅝
69	40¼	64¼	42	1,000,000	$50	Pan American Petrol. & Trans.	....	Oct. 20, 27	100	43	43	43	43	0
69¼	40½	67½	41	2,422,221	50	do B	....	Oct. 20, 27	3,800	43	43	43	43	0
15¼	3	12¾	1¾	199,370	N.P.	Panhandle Prod. & Refg.	....	.....	1,900	3	3	†1¾	2¼	— ⅜
76	47½	80	47½	25,666	$100	do pfd.	....	July 2, 23	.....	....	....	....	....	.....
..	..	27½	10	2,937,900	N.P.	Petroleum Corp. of America	37½cQ	Sept. 30, 30	32,800	10⅛	10½	10	10	0
47	24¼	44¾	16¼	2,670,089	N.P.	Phillips Petroleum Co.	50cQ	Oct. 2, 30	71,330	18⅛	19½	†16¼	16⅝	— 1⅜
3⅜	1	2½	¾	1,184,917	$25	Pierce Oil Corp.	....	.....	1,700	⅝	⅝	⅝	⅝	0
51½	20	52	9¾	150,000	100	do pfd.	....	Feb. 1, 22	2,700	11	11	9⅞	9⅞	— 2⅛
5⅞	½	7⅛	2¼	2,500,000	N.P.	Pierce Petroleum Corp.	10c	Nov. 15, 30	2,000	2¾	2¾	2½	2½	— ⅛
65⅜	40½	54	17	2,435,670	$25	Prairie Oil & Gas Co.	50cQ	Sept. 30, 30	8,500	18⅛	18⅛	†17	17	— 1
65	45	60	24⅜	4,050,000	25	Prairie Pipe Line Co.	‡75cQ	Sept. 30, 30	8,200	28⅜	28⅜	25	25	— 3½
25⅞	4	31	3	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 30	1,400	3½	3⅝	3½	3½	0
46¾	25½	38	14⅛	56,907	50	do pfd.	....	May 4, 25	370	....	15⅛	†14½	15	— ⅛
30⅜	20	27¼	10½	3,038,370	25	Pure Oil Co.	37½cQ	Sept. 1, 30	9,200	10¾	11	†10½	10½	— ½
116	108	114¼	93½	130,000	10u	do 8% pfd.	$2Q	Oct. 1, 30	640	100½	104	100½	102¼	+ 1¾
49⅝	22⅝	28¼	5⅞	2,891,735	25	Richfield Oil (California)	50cQ	Sept. 1, 30	43,720	6⅜	9¾	6⅛	7½	+ 1⅛
42½	15	25¾	7	1,235,270	N.P.	Rio Grande Oil Co.	50cQ	July 25, 30	3,200	8⅛	8⅜	7¾	7⅞	— ⅛
64	43⅛	56½	37⅝	951,310	$13.40	Royal Dutch (N. Y. shares)	$1.875	Aug. 13, 30	15,900	40⅝	41⅞	40½	41⅜	+ 1¾
55¾	43⅜	48⅜	32	77,492	£2	Shell Trans. & Trading	$1.453	July 28, 30	10	32	32	†32	32	— 1¼
31¾	19	25½	7⅛	13,069,076	N.P.	Shell Union Oil Corp.	35cQ	June 30, 30	22,300	8⅝	9¼	8¼	8⅝	+ ⅜
..	..	106¼	65½	400,000	100	do pfd.	$1.37½Q	Oct. 1, 30	4,500	69½	73¼	69½	73⅛	+ 5⅛
40⅛	15	37	6½	869,255	10	Simms Petroleum Co.	40cQ	June 14, 30	7,500	9	9	†6½	7	— 1½
45	21	32	11⅜	5,455,665	N.P.	Sinclair Consolidated Oil Corp.	50cQ	Oct. 15, 30	37,100	12⅝	13⅛	12⅛	12¼	— ½
111	103	112¼	99	154,685	100	do pfd.	$2Q	Nov. 15, 30	500	....	100	†99	99	— 4
46½	42	42	10¼	1,097,650	$25	Skelly Oil Co.	50cQ	Sept. 15, 30	3,600	13¼	13⅜	12½	12½	— 1
..	..	99¾	60	120,000	100	do pfd.	$1.50Q	Nov. 1, 30	600	61	61	†60	60	— 1⅛
..	..	106	98	750,000	100	S. O. Export Corp. pfd.	$2.50S.A.	June 30, 30	600	103⅛	104	103⅛	104	+ 1
81⅞	51½	75	48⅝	13,016,434	N.P.	S. O. California	62½cQ	Sept. 15, 30	21,000	49⅜	50	48¾	48⅞	— ⅛
..	..	49	17⅞	320,000	$25	S. O. Kansas	50cQ	Sept. 15, 30	1,900	18¼	19¼	18	18	— ⅛
83	48	84⅞	49	25,443,643	25	S. O. New Jersey	‡25cQ	Sept. 15, 30	73,200	53	55⅜	51⅞	52¼	— ½
48⅛	31¾	40⅜	24¾	17,809,530	25	S. O. New York	40cQ	Sept. 15, 30	31,243	24⅞	25½	24⅞	25¼	+ ¼
86⅜	55	70	47⅜	1,416,911	N.P.	Sun Oil Co.	25cQ	Sept. 15, 30	400	49	49½	49	49½	+ 1
*105½	100	107¾	102½	100,000	$100	do pfd.	$1.50Q	Sept. 1, 30	140	....	104½	103½	103½	— ⅝
24	5¼	9⅜	1¼	1,026,979	N.P.	Superior Oil Corp.	.....	.....	3,200	1⅜	1⅜	1¼	1¼	0
71⅞	50	60½	35	9,850,724	$25	The Texas Corp.	75cQ	Oct. 1, 30	47,200	38⅛	38¾	35¾	35¾	— 1¾
23⅞	9½	14½	5⅛	929,947	10	Texas Pacific Coal & Oil	‡2½%	Dec. 31, 29	1,400	6½	6½	5½	5½	— 1
23½	10	17¾	7½	5,881,980	N.P.	Tide Water Associated Oil	30cS.A.	Aug. 15, 30	22,400	7¾	8¼	7⅝	8	+ ½
90⅞	74⅛	89¾	69¾	732,550	$100	do pfd.	$1.50Q	Oct. 1, 30	700	71¼	71¼	70	70	— 1
40	14	31	15⅛	2,191,820	N.P.	Tide Water Oil Co.	20cQ	Sept. 30, 30	.....	....	....	....	....	.....
97½	85⅛	94⅞	81	199,443	$100	do pfd.	$1.25Q	Aug. 15, 30	1,300	82	82	†81	81¼	— ¾
..	..	24	12⅛	3,339,150	N.P.	Transcontinental Oil.	30c	May 1, 30	.....	....	....	....	....	.....
57	42⅛	50	25⅛	2,201,008	$25	Union Oil Co. (California)	‡50cQ	Aug. 9, 30	6,800	25¾	26½	†25⅛	25⅛	— ¾
..	..	38½	24	1,254,048	N.P.	Union Tank Car Co.	40cQ	Dec. 1, 30	.....	....	....	....	....	.....
42⅞	15	27	6	777,603	N.P.	Warner Quinlan Co.	25cQ	July 3, 30	3,200	6	6⅞	6	6	0
38	25	29½	26	490,000	N.P.	White Eagle Oil & Refg.	50cQ	Apr. 20, 30	.....	....	....	....	....	.....
29¾	12⅞	21	9	428,967	N.P.	Wilcox Oil & Gas Co.	....	May 10, 28	.....	....	....	....	....	.....

*New high †New low ‡Also extra s-Stock

Total sales 699,383

(*Continued from Page* 122)

until methods industries desired to condemn in their codes had resulted in a violation of the Clayton law. Their desire was to convince the commission that it was its duty to prevent as well as help in the punishment of overt acts against the law.

Stations to Receive 10% Of W. U. Wire Tolls

CLEVELAND, Dec. 8.—Oil companies will receive 10 per cent of the toll charges on telegrams telephoned from their service stations to the Western Union Telegraph Co. This new type of contract, known as Class 13 coin box agency, was started recently, and is exclusively for service stations.

As under the company's former plan, station attendants will not handle any messages. Customers may call the local Western Union office through the station's pay telephone, give the message, and deposit the coins at the direction of the telegraph company's employes.

Ten per cent of all tolls will be given the oil company by Western Union, in addition to the company's portion of the 5 cents for the local telephone call.

Ohio Producers Meet Dec. 11

LOGAN, O., Dec. 5.—The annual meeting of the Southeastern Ohio Oil & Gas Association will be held Dec. 11 at Logan at the Court House Auditorium, according to W. L. Franks, secretary.

Mr. Franks urges every producer in southeastern Ohio to attend. Officers and directors will be elected and matters of interest to oil and gas producers will be discussed. A turkey dinner at the Easterling Club House will be served by the association.

Pittsburgh Stock Exchange

Transactions Week Ended Dec. 5, 1930

	Sales	High	Low	Last	Change
Ark. Nat. Gas....	92	6⅜	6¼	6¼	— ⅜
do pfd.....	266	7⅝	7⅜	7⅝	+ ⅛
Devonian Oil....	130	7	6½	7	+ ½
Lone Star Gas....	6,836	24½	23½	23¾	— ¼
do pfd.....	25	105	105	105	—1
Phoenix Oil.....	1,000	c.20	.20	.20	0
Pgh Oil & Gas....	200	2	†2	2	— ½
Salt Creek Con...	100	1⅞	1⅞	1⅞	+ ⅛
Shamrock O & G.	135	10⅛	†10	10	0
Waverly Oil A...	100	10	10	10	—5

†New low record.

Pittsburgh Curb Market

Transactions Week Ended Dec. 5, 1930

	Sales	High	Low	Last	Change
Gulf Oil Corp....	300	76	76	76	....

N. P. N. Service Record

Some of the requests for information, data and advice, which were taken care of in various National Petroleum News offices in the past week are:

New York engineering society furnished six-page list of all U. S. oil and natural gas trunk pipeline companies, together with their addresses.

* * *

Ohio oil jobber give our verification of tank wagon prices published in our yearly Oil Price Handbook for law suit.

* * *

Massachusetts lube oil distributor furnished names and addresses of 10 Pennsylvania motor oil refiners and two brokers.

* * *

Quebec oil jobber, seeking an anti-knock gasoline to compete with nationally known brand, furnished names and addresses of six refiners who move their goods up the Hudson to Albany terminals and would have suitable freight rates; also referred to six Louisiana and Arkansas refiners producing anti-knock gasoline.

* * *

Kentucky refiner referred to domestic fuel oil specifications which he inquired about published in Nov. 6, 1929 issue, page 81.

* * *

Nationally known tank manufacturer furnished with list of all active oil associations, published last in Apr. 9 issue, page 108.

* * *

Saskatchewan station operator referred to several articles published in N.P.N. on evaporation and shrinkage of gasoline, and his attention called to forthcoming comprehensive article on this subject.

* * *

A new Michigan oil jobber, desiring sources of supply whose freight rates enable him to compete with major companies in his territory, furnished with names and addresses of 11 refiners.

* * *

Vermont oil jobber told where he may obtain coupon books.

* * *

Louisiana oil jobber referred to sources from which he may buy benzol.

* * *

New York oil jobber referred to manufacturers of portable service station buildings.

* * *

Buffalo oil company furnished name and address of makers of oil sample bottles.

* * *

Philadelphia advertising agent referred to two sources for statistics on oil burners.

* * *

New Jersey inquirer furnished data on present status, earnings, and stock of eastern oil transport company.

* * *

New York manufacturer of naphthas, thinner sand solvents given explanation of open tank wagon prices.

* * *

San Francisco bank member told in three page letter of development of hydrogenation process and given N.P.N. bibliography on this subject.

New Jersey university student referred to reports and sources from which he may obtain data for a thesis on government regulation of the oil industry.

* * *

Washington lumber company furnished names and addresses of California refiners who ship goods to that state.

* * *

Advertising department of major eastern oil company furnished references to six articles published in N.P.N. on evaporation losses, and five references to U. S. Bureau of Mines publications.

* * *

Texas oil jobber furnished names and addresses of 22 nearby refiners from whom he may buy his oil requirements.

* * *

Connecticut oil jobber promised collection of any data on practice of oil companies in insuring against damages caused by mistakes in delivery of goods.

* * *

Texas inquirer given data on possible location for small refinery.

* * *

Florida oil company president told how to obtain copy of U. S. oil fields he inquired about.

* * *

Texas drilling contractor stopped at Houston office to discuss oil producing conditions generally.

* * *

Pennsylvania banker furnished information on a county in Texas.

* * *

Kansas oil company referred to three manufacturers of power suction machines for cleaning empty oil drums.

* * *

Florida inquirer furnished data on two of the world's largest oil companies.

* * *

Wisconsin motor oil distributor told to whom to write in order to become a member of the association for selling 100 per cent Pennsylvania oil.

* * *

Lube oil distributor in England furnished names and address of eight U. S. manufacturers of greases who might supply him with fibre and yarn greases.

* * *

French oil distributor furnished names and addresses of five U. S. refiners with whom he might make a connection in France.

* * *

Oil importer in India furnished names and addresses of manufacturers of Gulf Coastal pale and red oils and to manufacturers of Mid-Continent cylinder stocks.

* * *

Maryland oil jobber furnished explanation of several California gasoline prices published in N.P.N.

* * *

Kansas oil compounder referred to N.P.N. trade-mark service for establishing registrability of trade-name he wants to use.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

SERVICE STATION MANAGER desires new connection. Can increase your lubrication and oil sales and consequently gasoline. Am now gainfully employed. Ohio territory preferred. Address Box 614.

GRADUATE ANALYTICAL CHEMIST, 3 years experience in oil laboratory, desires position with oil company. Available December 15th. Address Box 622.

EQUIPMENT SALES ENGINEER

Minute knowledge of all gasoline and oil marketing equipment, eight years field experience with Wayne and Service Station Equipment Co. (Bennett), with oil companies in Indiana, Illinois, Kentucky. Available about January 1st. All lines and propositions will be considered.

Address Box 125, Evansville, Ind.

Situations Open

TANK CAR SALES MANAGER

Needed to fill vacancy caused by promotion; eastern company. Give full details and salary expected. Exceptional sales record necessary.

Address Box 621

SALESMAN WANTED—With connections in jobbing trade to take orders for our line of lead soap, cold flo transmission and differential lead base greases. Address Box 620.

LUBRICATING ENGINEERS FOR FOREIGN SERVICE

One lubricating oil expert and engineer with thorough knowledge of lubricating oils and lubricants, their use and applications for industrial plants, mines, electric and steam railways.

Also one experienced lubricating engineer with thorough knowledge of automotive and airplane engine lubrication. Applicants must speak Spanish.

Address Box 619

For Sale

FOR SALE

Leach Fracto Dephlegmators.
Wheeler Radojet Pumps with intercoolers.
No. 12 Sweetland Filter.
Vapor Condenser—Hot Oil Pump.
All as good as new equipment.

EDW. W. LAWLER, INC.
Metuchen, New Jersey

Patent Attorneys

ROYAL E. BURNHAM
Attorney-At-Law
Patent and Trade-Mark Practice Exclusively
Continental Trust Building
Washington, D. C.

Standard Oil Stocks on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Outstanding Shares	Par Value	Companies	Div. Rate	Last Paid	Transactions Week Ended Dec. 6 Sales	First	High	Low	Last	Change
18¾	13½	18½	12¼	.....	£1	Anglo-Amer. Oil voting stk. ctfs.	36c	June 5, 29	.....	.....	.....	.....	.....	.....
17⅛	11	19	12	.....	£1	do non-voting stk. ctfs.	36c	June 5, 29	.....	.....	.....	.....	.....	.....
2½	¾	1	⅜	500,000	N.P.	Atlantic Lobos Oil	....	.....	.....	.....	.....	.....	.....	.....
4½	1	1½	¼	200,000	$50	do pfd	....	.....	.....	.....	.....	.....	.....	.....
46½	25	25	11¼	40,000	25	Borne Scrymser Co.	$1S.A.	Oct. 15, 30	.....	.....	.....	.....	.....	.....
74¼	55	69	43	200,000	50	Buckeye Pipe Line Co.	$1Q	Sept. 15, 30	600	43	44	43	44	+ ½
210	130	184⅞	100¼	120,000	25	Chesebrough Mfg. Co.	‡$1Q	Sept. 30, 30	.....	.....	.....	.....	.....	.....
11⅜	5⅝	7⅝	3⅜	.....	N.P.	Creole Petroleum Co.	....	.....	4,700	3¾	3⅞	3⅝	3¾	+ ⅛
75¾	40	65¾	22	30,000	$50	Cumberland Pipe Line Co.	$1Q	June 16, 30	.....	.....	.....	.....	.....	.....
70½	42	54¾	28¾	50,000	100	Eureka Pipe Line Co.	$1Q	Nov. 1, 30	250	28¼	30⅛	†28¾	30	0
...	...	6¾	2½	280,000	N.P	Galena Oil Corp. w.i.	....	.....	.....	.....	.....	.....	.....	.....
...	...	37¼	26	.....	N.P.	General Petroleum Corp. w.i.	....	.....	100	27½	27½	27½	27½	+ 1½
128	74¼	119	67¾	2,974,645	$25	Humble Oil & Refg. Co.	‡50cQ	Oct. 1, 30	3,900	69	69½	†67¾	67¾	— ¾
41	22	30	15⅞	26,490,741	N.P.	Imperial Oil, Ltd.	12½cQ	Dec. 1, 30	4,800	17⅜	18	17⅜	17⅞	+ ⅜
42⅛	26	41	19⅞	300,000	$10	Indiana Pipe Line Co.	50cQ	Nov. 15, 30	200	20	20	20	20	+ ⅛
29⅜	15	24	13⅝	14,247,880	N.P.	International Petroleum Co.	25c	June 16, 30	4,800	14⅞	15	14½	14¾	0
25⅞	10½	22⅜	13	509,000	$12½	National Transit Co.	25cQ	June 16, 30	2,200	14⅜	14½	14	14	+ ⅛
17¾	10	21	10⅜	100,000	10	New York Transit Co.	40cQ	Oct. 15, 30	200	13⅝	14⅝	13⅝	14⅝	— ½
63	41	54	26½	40,000	50	Northern Pipe Line Co.	$2S.A.	July 1, 30	.....	.....	.....	.....	.....	.....
105½	103¾	108	103	600,000	100	Ohio Oil pfd.	$1.50Q	June 14, 30	.....	.....	.....	.....	.....	.....
44½	18⅝	32	15⅜	400,000	25	Penn Mex. Fuel Co.	$1	May 20, 30	400	18	18	17	17	— 1
50	29	33	5⅞	160,000	25	Solar Refining Co.	$1.25S.A.	Dec. 20, 29	800	7¼	7¼	†6⅞	6⅞	— ⅝
23½	13	20⅛	6¾	100,000	10	Southern Pipe Line Co.	$5	Dec. 1, 30	500	9⅞	10	9⅞	10	+ 1
60¼	35⅛	45⅞	22	1,200,000	25	South Penn Oil Co.	50cQ	Sept. 30, 30	1,900	22½	24	22⅛	22½	— 1½
70	45	64	32½	35,000	50	Southwest Pa. Pipe Lines.	$1Q	Oct. 1, 30	200	35	36	35	36	+ 2½
63	45	59⅞	35⅛	16,850,587	25	S. O. Indiana	62½cQ	June 16, 30	26,000	36¾	37	36½	36¾	— ⅛
46⅞	29	40½	20⅛	2,577,124	10	S. O. Kentucky	40cQ	June 30, 30	10,700	23⅞	24¾	22⅝	23½	0
50¼	40	48⅞	35¼	188,159	25	S. O. Nebraska	‡62½cQ	June 20, 30	100	38¼	38¾	38¼	38¼	+ ⅞
129	60	108½	50⅛	560,000	25	S. O. Ohio	62½cQ	Oct. 1, 30	600	54	54	52	52	— 2⅜
...	...	...	...	120,000	100	do 5% pfd.	....	.....	.....	.....	.....	.....	.....	.....
124½	113½	122	115¼	70,000	100	do 7% pfd.	$1.75Q	Sept. 2, 30	20	115¼	115¼	115¼	115¼	0
18	5⅜	10	4	34,158	25	Swan Finch Oil Corp.	....	Jan. 15, 29	600	5	5	5	5	+ 1
133¾	75⅜	97⅞	59⅜	5,139,887	25	Vacuum Oil Co.	$1Q	June 20, 30	8,100	64½	65⅞	63¼	63¼	— ¼

*New high †New low ‡Also extra

Independent Oils on New York Curb

1929 High	1929 Low	1930 High	1930 Low	Par Value	Companies	Transactions Week Ended Dec. 6 Sales	First	High	Low	Last	Change
.72	⅛	⅜	1/16	$1	Amer. Contr. Oilfields	.....	.....	.....	.....	.....	.....
8⅝	1⅛	4½	⅝	5	Amer. Maracaibo.	4,400	¾	1	¾	⅞	0
4¾	1	1⅜	1⅛	10	Argo Oil	.....	.....	.....	.....	.....	.....
26	3¾	16⅜	5⅛	N.P.	Arkansas Nat. Gas.	1,300	6½	6⅜	6⅛	6⅛	— ⅜
24¾	6½	16⅝	4⅜	N.P.	do Class A	12,000	6½	6⅝	6	6⅛	— ⅝
9	4	8⅛	7½	10	do pfd.	200	7½	7½	7½	7½	— ⅛
70	50	28½	13½	N.P.	British American Oil.	500	13⅞	13⅞	†13½	13½	— 1¾
4⅞	⅞	2¾	¾	¼	Carib Syndicate	1,600	1¼	1¼	1	1⅛	— ⅛
68½	20	44¼	16	N.P.	Cities Service	153,500	19⅛	19⅞	17⅜	18	— 1¼
99¼	84	93⅞	52	100	do pfd.	1,600	89½	89½	88¾	88¾	— ⅞
9¼	8	9	7½	10	do pref. B	.....	.....	.....	.....	.....	.....
96	81	89⅞	80	100	do pref. BB	.....	.....	.....	.....	.....	.....
1½	¼	⅜	1/16	1	Colombia Syndicate	12,700	1/16	1/16	⅛	1/16	0
15	3⅞	8¼	2¼	N.P.	Colon Oil Corp.	2,600	2⅜	2⅜	2¼	2¼	0
...	...	21	5¾	N.P.	Columbia Oil & Gas.	3,400	6¼	6⅜	5⅝	6	— ⅞
11⅛	2½	5⅞	2	10	Consolidated Royalty.	100	2½	2½	2½	2½	0
135	42	74¾	18¼	N.P.	Cosden Oil Co.	3,200	2⅜	4⅛	2⅜	3¾	+ 1¼
87	55	70	15½	100	do pfd.	.....	.....	.....	.....	.....	.....
2½	¼	1	¼	N.P.	Crown Central Pet.	200	⅞	⅞	⅞	⅞	0
11⅜	4	...	...	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
51⅜	51⅛	...	...	100	do pfd.	.....	.....	.....	.....	.....	.....
26	6½	13½	4¾	N.P.	Darby Petroleum	100	5½	5½	5½	5½	— ½
...	...	21¾	21½	N.P.	do new	.....	.....	.....	.....	.....	.....
11	2	11	3½	N.P.	Derby Oil & Refg.	900	4⅛	4⅛	†3½	3⅝	— ⅞
44	17	60	30	N.P.	do pfd.	100	35	35	35	35	— 7
...	...	12	12	10	Devonian Oil	.....	.....	.....	.....	.....	.....
209	115	166⅞	72	$25	Gulf Oil Corp.	7,200	74⅜	76¼	†72	73	— 1¾
7½	1⅜	4	2¼	N.P.	Homaokla Oil	.....	.....	.....	.....	.....	.....
...	...	47½	17¼	N.P.	Indian Territory A.	2,700	19⅞	19⅞	17¾	17¾	— 2⅛
...	...	53½	17	N.P.	do B.	1,600	19¾	19¾	18¼	18¼	— 1½
2⅞	⅜	1¾	⅜	10	Intercontinental Pet.	1,100	⅜	½	⅜	⅜	0
3⅝	1¼	3	1⅛	N.P.	Kirby Petroleum	200	1⅛	1¼	1⅛	1¼	+ ⅛
6⅛	1	4¾	¾	N.P.	Leonard Oil & Dev.	13,900	⅞	⅞	½	¾	— ⅛
38⅞	18	29	6¼	N.P.	Lion Oil Refg.	900	7¾	7¾	7⅝	7⅝	— ⅜
67⅞	28	55⅞	20⅛	N.P.	Lone Star Gas.	4,100	24	24⅝	23¼	23½	— ¾
...	...	31	5½	$25	MacMillan Petrol.	.....	.....	.....	.....	.....	.....
2⅞	¼	½	⅛	1	Magdalena Synd.	600	1/16	1/16	1/16	1/16	0
38½	14	16	3	N.P.	Margay Oil.	1,100	3¼	3⅜	†3	3⅜	+ ⅜
6⅜	2¼	7½	1¾	N.P.	Mexico Ohio Oil	10,500	1⅞	1⅞	1⅞	1⅞	— ⅛
...	...	11⅞	2¼	N.P.	Middle States A v.t.c.	3,100	3	3¼	3	3	+ ⅛
...	...	6	1	N.P.	do Class B v.t.c.	2,700	1¼	1¼	1	1¼	— ½
42	8	36¼	6⅜	5	Missouri-Kansas P.L.	11,300	7¾	7⅞	†6⅜	6⅜	— 1¼
1½	¼	¾	⅜	1	Mountain & Gulf Oil.	200	⅜	⅜	⅜	⅜	0
22⅞	7	12⅛	5⅜	10	Mountain Producers.	4,500	5⅜	6	5⅝	5⅝	— ⅛
43⅞	24	41⅜	23	N.P.	Nat. Fuel Gas.	1,700	25¼	25½	†23	23	— 2½
5	2¼	3½	1⅜	$5	New Bradford Oil.	1,500	2	2	1⅜	1⅜	— ⅛
4¾	3⅛	3⅛	2⅛	10	New England Fuel.	100	2⅛	2⅛	†2⅛	2⅛	— ½
24½	11⅛	16⅞	4	25	N. Y. Pet. Royalty.	.....	.....	.....	.....	.....	.....
18½	6⅛	11¼	3	N.P.	North Central Texas	200	3¾	3¾	3¾	3¾	— ¼
19¼	8⅛	11⅝	4¾	N.P.	Oilstocks Ltd. A.	800	5	5	†4¾	4¾	— ¼
18¼	8½	11½	5	N.P.	do B.	.....	.....	.....	.....	.....	.....
26⅝	12½	19½	8¼	N.P.	Pacific Western Oil.	3,000	9⅝	9⅝	9⅛	9¼	— ⅜
3½	½	2½	¼	N.P.	Pandem Oil	5,800	¼	1/16	¼	¼	0
10½	2¼	4⅜	1⅜	N.P.	Pantepec Oil	3,600	1¾	1¾	1⅜	1⅜	— ¼
25½	13⅛	15	13⅛	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
28	17	29	19⅛	N.P.	Petroleum Corp.	.....	.....	.....	.....	.....	.....
...	...	5⅞	1	...	do warrants	2,100	1⅛	1⅛	1	1⅛	— ⅛
37	22	27½	17⅞	N.P.	Plymouth Oil	700	19½	19½	19⅛	19⅛	— ⅛
16	9	10½	4	$5	Red Bank Oil	300	4¼	4¼	†4	4	— ½
8½	1⅜	5⅜	1⅜	N.P.	Reiter-Foster Oil	900	1½	1½	1⅜	1⅜	— ⅛
25¾	19	23½	9¾	25	Richfield Oil pfd.	300	10⅝	13	10⅜	13	+ ⅞
29	13	25	2¼	N.P.	Root Refining pr. pfd.	200	3	3	2¾	2¾	+ ½
11	3	8⅜	2	N.P.	Ryan Consolidated.	500	2¾	3	2½	2½	— ½
5⅞	1⅞	2½	1⅜	10	Salt Creek Consol.	300	1¾	1¾	1¾	1¾	+ ¼
25⅞	9	15¼	5¼	10	Salt Creek Producers	5,700	6⅞	7⅛	6⅝	6⅝	— ⅛
33⅛	10	8	1¾	25	Shreveport El Dorado	1,100	1¾	1¾	†1¾	1¾	— 3⅞
...	...	39⅛	39	25	Signal Oil & Gas A.	.....	.....	.....	.....	.....	.....
24	9	17	7	N.P.	Southland Royalty.	1,300	8¼	8¼	7	7	— 1⅛
12	4	10	2⅝	5	Sunray Oil	16,000	3⅜	3⅜	†2⅜	2⅞	— ⅝
23	7⅛	19½	8⅛	N.P.	Texon Oil & Land.	600	11½	12½	11½	12⅜	+ ⅜
81⅜	8⅞	16	8	10	Venezuela Mexico	.....	.....	.....	.....	.....	.....
6½	1⅛	4½	1⅛	5	Venezuela Petroleum.	2,100	1¼	1⅜	†1⅛	1⅛	— ⅛
9⅛	2	5	2	1	Woodley Petroleum.	.....	.....	.....	.....	.....	.....
5⅜	¼	2½	⅜	N.P.	Y Oil & Gas	.....	.....	.....	.....	.....	.....

*New High. †New Low.

New York Bonds

Week Ending Dec. 5

	High	Low	Last	Change
Asso. Oil Gold 6s	102¾	102¾	102¾	+ ¼
Atlantic Refg. deb. 5s	102½	101½	102½	+ ⅞
Cal. Pet. 5s	99¼	98½	99	— ½
Cal. Pet. 5½s	102	100¾	101	0
General Pet. 5s	102½	102½	102½	0
Humble Oil & Refg. 5s	69¾	67¾	68½	+ ½
Humble Oil & Refg. 5½s	102⅝	102½	102½	— ⅛
Pan Amer. P & T 6s	102	101⅞	101⅞	— ⅛
Pan Amer. P & T 6s	78¾	75	78⅜	+3⅜
Phillips Pet. 5¼s	90½	87½	90	0
Pierce Oil deb. 8s	103	103	103	—3
Pure Oil 5½s	96⅛	95	95	—1
Pure Oil 5½s	94¼	93	93	—1⅝
Richfield Oil Calif. 6s	75	69¾	75	+3
Shell Union Oil 5s	84	81½	81¾	—2¼
Shell Union Oil 5s war.	84¾	83	83	—1½
Sinclair Con. Oil 7s	101¾	100¼	100¼	— ¼
Sinclair Con. Oil 6½s	99¾	99	99⅛	— ¼
Sinclair Con. Crude 5½s	102	101⅜	101½	— ⅛
Sinclair Pipeline	100¼	100	100¼	+ ¼
Skelly Oil 5½s	82¼	80	81½	—1⅜
S. O. N. J. 5s	104¼	103⅝	103⅝	0
S. O. N. Y. 4½s	99⅞	99⅜	99⅝	0
Transcontinental Oil 6½s war	110¼	110⅛	110⅛	— ⅛
Transcontinental Oil 6½s Ex-war	100¼	100¼	100¼	0
Union Oil of Calif. 5s C.	100¾	100⅜	100⅜	— ⅛
Union Oil of Calif. 5s war.	97	95½	97	+ ¾
Warner-Quinlan 6s	56	54	54	0
White Eagle Oil 5½s war.	102¾	102¾	102¾	— ¼

New York Curb Bonds

Week Ending Dec. 5

	High	Low	Last	Change
Cities Serv. 5s '66	80¼	78	78	— ½
Cities Serv. 5s '50	81⅝	79⅛	79⅜	—1⅜
Cities Serv. G. 5½s '42	86½	85	85	—1⅜
Cities Serv. G. P. 6s '43	92¼	91	91	—1¼
Cont. Oil 5½s '37	95	93	93	—2
Empire O & R 5½s '42	84¼	83	83⅞	—1¼
Gulf Oil 5s '37	101½	101	101½	+ ⅜
Gulf Oil 5s '47	102⅝	102	102½	0
Indep. Oil 6s '39	100½	99	99¼	—1⅜
Sun Oil 5½s '39	102⅜	101½	101½	— ⅝
Valvoline Oil 7s '37	100	99½	99½	— ½

Demand for Lubes Speeds Up

HOUSTON, Dec. 6.—Conditions are unchanged in the Gulf Coastal lubricants market where prices have remained stationary in the face of somewhat accelerated winter demand. Jobbers are reported holding their inventories low and taking out increased quantities of the various grades mainly as needed.